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**Digital Dating: Online Dating Profiles of Older and Younger Gay,
Lesbian, and Heterosexual Adults**

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**Digital Dating: Online Dating Profiles of Older and Younger Gay,
Lesbian, and Heterosexual Adults**

by

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Digital Dating: Online Dating Profiles of Older and Younger Gay, Lesbian, and Heterosexual Adults

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Online dating is a common way for older, gay, and lesbian adults to find a romantic partner, yet little is known about their dating motivations and self-presentations. Adults of different ages, genders, and sexual orientations may have different approaches to dating and presenting themselves online. Adults' profiles are likely to differ based on evaluations of the desires of potential partners, as well as individuals own stage in life and place in their broader social environment. Using a mixed method approach in three studies, this dissertation examines thousands of dating profiles randomly sampled from two popular dating websites and various regions of the US. The first two studies examine the dating profiles of older and younger gay, lesbian, and heterosexual adults. Study 1 explores the extent to which adults emphasize the "self" versus connections to others. Study 2 examines the degree to which adults discuss and display their bodies and sexuality. Study 3 utilizes a separate dataset of older gay, lesbian, and heterosexual adults and focuses on common profile content and potential regional differences in profile content. Results revealed that older adults were more focused on close social ties in their profiles, while younger adults were focused on the self and were more likely to post different types of photographs. Further, older adults were just as likely as younger adults

to discuss sexuality in their profiles, but less likely to display their bodies in photographs. Gay and lesbian adults were more likely to emphasize friendships, while heterosexual adults focused more on family. Gay men and heterosexual women seemed to craft their profiles to appeal to men's desire for physical attractiveness and sexuality, using photos to display their bodies. Conversely, heterosexual men and lesbian women presented themselves as focused on others, perhaps to appeal to the communal nature associated with women. With regard to regional environment, older gay and lesbian adults residing in environments with low structural support for LGBT people were most likely to emphasize a desire for shared experiences, potentially reflecting feelings of disconnectedness to their environments. Findings suggest that despite the scripted nature of dating profiles, adults with different characteristics may have distinct motivations when seeking a romantic partner.

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GENERAL INTRODUCTION

Demographic changes across the last few decades have led to an increasingly large proportion of single older adults in the United States. Further, changing attitudes and increased acceptance of same-sex relationships has led to an increased focus on a vastly understudied population of single adults who identify as gay or lesbian. Although research interest into dating among aging and LGBT (lesbian, gay, bisexual and transgender) populations has increased in recent years, we still lack a clear understanding of the dating lives of these adults, including their motivations to date and how they present themselves in a dating context.

This dissertation aims to expand knowledge of dating in late life and dating as a gay or lesbian adult through three studies, each analyzing the content of publically available online dating profiles. Individuals use dating profiles to attract a romantic partner and the content of these profiles depict an individual's representation of themselves, as well as their interests, social lives, and desires for a partner or relationship (Fiore, Taylor, Mendelsohn, & Hearst, 2008). These profiles also convey one's physical appearance, often through photographs. Each of these dimensions of dating profile content are likely to be influenced by a variety of factors including an individual's developmental stage and history, their embeddedness in broader social environments, and their evaluations of the desires of potential partners.

This dissertation explores written profile content and photographs in order to examine profile differences as a function of age, gender, and sexual orientation. Study 1 sought to understand how individuals present themselves to partners with regard to themselves and their social world. An individual's self-concept and identity as well as their ties to close network members shift throughout the lifespan and are influenced by

the broader social environment. Therefore, we considered differences in the extent to which individuals focused on the self and close social ties, both in written profile descriptions and through the use of “selfies” and group photographs. Study 2 explored how individuals portrayed their bodies and sexuality in their written profile descriptions and photographs. Because physical intimacy and sexuality are primary features of romantic relationships, individuals are likely to tailor these aspects of their profile to match the perceived desires of potential partners. Study 3 focused only on the profile content of older gay, lesbian, and heterosexual adults and employed quantitative content analysis to identify the common themes present across dating profiles. Study 3 also explored the role of geographic context in shaping dating profile content among older adults from areas of the country with high or low levels of structural support for LGBT adults.

Below, I discuss trends in online dating and further explain the process of self-presentation within a dating website. Subsequently, I detail the potential age, gender, and sexual orientation differences in profile content, relying on several theoretical perspectives that each inform how individuals may present themselves to potential partners online. Then, I describe the importance of considering the context of LGBT individual’s dating lives. Lastly, I present the three studies in greater detail, including clarifications on terminology.

ONLINE DATING AND SELF-PRESENTATION

In the last decade, online dating has becoming an increasingly popular way for single adults to find a romantic partner. A majority of Americans now consider online dating as a good way to meet a partner (Smith & Anderson, 2016). In line with these trends, gay and lesbian adults and adults over the age of 60 are key demographics shown

to be utilizing online dating in increasing numbers (Ellin, 2014; Harris Interactive, 2007; Lever, Grov, Royce & Gillespie, 2008). In fact, research suggests that online dating is the predominant way same-sex couples are formed in the US, with over 60 percent of same-sex couples in a recent study reported having met online (Rosenfeld & Thomas, 2012).

Online dating self-presentations are critically important in dating success. Self-presentations convey important information to potential romantic partners who use this information when deciding whether or not to begin a relationship (Derlega, Winstead, Wong, & Ward, 1987). Accordingly, research suggests that individuals are strategic in the information they present in online dating profiles, both in written descriptions (McKenna, Green, & Gleason, 2002; Whitty, 2008) and in profile photographs (Makhanova, McNulty, & Maner, 2017).

Profile writers share basic norms about what to include in their profiles and in many cases dating websites provide instructions or guidelines for creating a profile (Fiore et al., 2008). Profiles typically involve both text portions and photographs. For example, profile writers who post photographs are contacted approximately seven times more often than profile writers who do not (Humphreys, 2004). Further, individuals generally use the text portion of their profiles to describe themselves, their interests, and preferred characteristics of a potential partner or relationship (Fiore et al., 2008).

Yet, the information conveyed in photographs may be different than the information conveyed in written text. Profile photos are expected to provide potential partners with a sense of the profile writers' physical appearance. However, photographs can also convey other self-relevant information through props and settings that provide impressions of the profile writer outside of solely physical attributes (Hancock & Toma, 2009; Leary, 1995). Conversely, while written descriptions typically communicate a profile writer's interests, hobbies, and desires for a partner or relationship, profile writers

may also use written descriptions to communicate information about their physical attributes. Regardless, research suggests that online dating photos often serve to emphasize or complement the information in written self-descriptions (Ellison, Heino, & Gibbs, 2006). The first two studies of this dissertation examined both the photographs and written descriptions in online dating profiles.

Prior research suggests that profiles often contain similar content, reflecting dating motivations that are common to adults seeking new partners, such as a desire for love, companionship, and romance (Davis & Fingerman, 2016; Menkin, Robles, Wiley, & Gonzaga, 2015). Yet, individuals also self-present in distinct ways to attract potential partners. Drawing on developmental and sociocultural theories as well as social exchange theory, we anticipated that adults may present themselves in different ways based on their age, gender, and sexual orientation. Specifically, an individual's stage in the life course, their socialization in a broader social and cultural environment, and their evaluations of the desires of potential partners are likely to be related to how adults craft their dating profiles, including the information they choose to include or emphasize.

AGE DIFFERENCES

Research suggests that dating and partnering behaviors as well as goals for relationships change over the life course and vary between individuals of different ages (for a review, see Sassler, 2010). Developmental and sociocultural theories provide insight to the current studies by elucidating how broader personal motivations may shift with age or stage in the life course.

Life course theory (Elder, 1998; Elder, Johnson, & Crosnoe, 2003) suggests that personal goals and motivations differ depending on one's stage in the life course and the demands individuals face at different ages. Young adulthood is characterized by goals

related to discovering and exploring one's identity. When individuals are entering adulthood, they are learning to accept responsibility for themselves and they are motivated to achieve adult statuses and assume adult roles (Arnett, 2000). Young adulthood is filled with a range of tasks related to establishing the self, such as traveling, pursuing an education, launching a career, and becoming financially independent from one's parents (Cherlin, 2004; Furstenberg, 2010). In fact, the desire to form a romantic relationship may be tied to motivations to establish the self; young adults may view a successful relationship as an important marker of adulthood (Cherlin, 2004).

By contrast, older adults have different goals based on their position in the life course. Research finds that older adults are less concerned with identity than younger adults and more concerned with goals related to generativity (Sheldon & Kasser, 2001). With age, adults invest more in close relationships and begin to view themselves in a communal context (Fingerman, 2001; Bliezner, 2006). The importance of the self and close relationships at different points in adulthood may contribute to how adults present themselves to potential partners (for example, individuals who are more focused on others may discuss close relationships more in their profiles).

Socioemotional selectivity theory also speaks to the importance of relationships across the lifespan. The theory posits that as adults age, they sense that have less time remaining in their lives. This shrinking time perspective leads older adults to prioritize emotionally meaningful goals and relationships characterized by positive emotional exchanges (Charles & Carstensen, 2010). A romantic relationship could serve as a source of positive emotional experiences for older adults, by allowing them to share thoughts, feelings, and engage in shared activities (Le & Agnew, 2001). Consistent with these ideas, a desire for companionship seems to be a primary motivation for older adults to engage in dating relationships (Calasanti & Kiecolt, 2007; Cooney & Dunne, 2001;

Montenegro, 2003). Moreover, socioemotional selectivity theory suggests that adults often trim their social networks as they age, focusing more on the closest ties to family and friends (Charles & Carstensen, 2010). Based on this idea, older adults may be more likely to focus on close social connections in their dating profiles.

Further, sociocultural theories suggest possible age differences in how individuals may present their bodies at different ages. Scholars propose that ideas about attractiveness and the body are transmitted through culture and can affect individuals as they age (Clark & Korotchenko, 2011). The dominant US culture holds strong ideals regarding attractiveness and body image, with emphasis on youth and thinness (Cafri, Yamamiya, Brannick, & Thompson, 2005), and this may be related to how individuals of different ages present their bodies in their dating profiles. Young adults may present their bodies and convey their physical beauty to attempt to attract partners. But as individuals age, they may feel greater dissatisfaction with their bodies and may be less likely to focus on their physical features in their dating profiles.

GENDER AND SEXUAL ORIENTATION DIFFERENCES

Theories such as social role theory can help to explain gender differences in dating motivations and profile content. Social role theory suggests that differences between men and women in their social behavior is tied to the social role distributions in society, with women often performing roles related to social concerns and family maintenance (Eagly, Wood & Diekmann, 2000). Theorists note that social stereotypes regarding men and women can be summarized into the idea that men are agentic and women are communal (Eagly & Wood, 2011). These pervasive cultural stereotypes suggest that women are warm, focused on others, and emotionally expressive, while men

are assertive, competitive, and dominant. As such, women may be more likely to focus on their close relationships than men in their dating profiles.

Socioemotional selectivity theory has also been used to understand the social networks of adults across the lifespan, as well as differences in social network structure among adults of different sexual orientations. Specifically, socioemotional selectivity theory suggests that as they age, individuals will focus on close relationships with the greatest emotional rewards. Due to potential strain in family ties or less social support from family members, scholars have found that the social networks of older gay men and lesbian women are made up of a majority of close friends (Grossman, D'Augelli, & Hershberger, 2000). Conversely, the close social networks of heterosexual adults appear to be made up of more family members than friends (Carstensen, Fung & Charles, 2003). It is important to note that these studies were conducted over a decade ago and may not apply in young cohorts of gay and lesbian adults, as greater LGBT acceptance in recent years may mean less family strain for those adults. Regardless, different prioritization of social relationships between heterosexual and gay and lesbian adults may be reflected in profile content of older cohorts.

Additionally, social exchange theory is helpful in understanding how gay, lesbian, and heterosexual men and women may use their dating profiles to attract potential social partners. Originally introduced by Thibaut and Kelly (1959), social exchange theory suggests that relationships are an exchange of resources, and the formation of a relationship involves an analyses of costs and benefits. Moreover, individuals are motivated to seek a partner based on the potential rewards they would gain in a relationship (Heino, Ellison, & Gibbs, 2010; Huston & Burgess, 1979). When crafting a dating profile, individuals are likely to offer information about themselves that complements the (perceived) desires of a potential partner (Heino et al., 2010). Based on

this idea, a social exchange perspective emphasizes not only the characteristics of the profile writer, but also who the profile writer is seeking to form a relationship with.

The social exchange perspective is especially helpful in understanding how individuals discuss and display both their bodies and sexuality as well as their connections to close others in their dating profiles. A broad literature suggests that men are more focused on sexuality and physical attractiveness in a potential partner than women (Bailey, Gaulin, Agyei, & Gladue, 1994; Deaux & Hanna, 1984; Ha, van den Burg, Engels, & Lichtwarck-Aschoff, 2012; Hatala & Prehodka, 1996; Russock, 2011). Because of this greater focus on sexuality and attractiveness among men, we expected to find greater displays of these characteristics in the profiles of individuals seeking to partner with men (gay men and heterosexual women). Further, as previously discussed women appear to be more focused on close relationships, so individuals attempting to partner with women (heterosexual men and lesbian women) may present themselves as invested in close relationships both by writing about their family and friends in text and by presenting photos with social partners.

Lastly, sociocultural research suggests different norms and socialization regarding the body in the subcultures of gay men and lesbian women. These different norms may be associated with gender and sexual orientation differences in feelings about the body as well as dating self-presentations. Specifically, lesbian culture does not seem to adhere to the broader cultural attitudes emphasizing youth, thinness, and beauty (Krakauer & Rose, 2002). Therefore we may expect lesbian women to be less likely than other groups to focus on their bodies in dating profiles. Conversely, research notes that gay male culture is especially concerned with youth, physical fitness and masculinity (Suen, 2015; 2017). We may expect the dating profiles of gay men to reflect this greater focus on the body.

IMPORTANCE OF HISTORY AND CONTEXT FOR LGBT ADULTS

Life course theory emphasizes the importance of historical and contextual factors that shape individual's lives and suggests that one's local environment can influence behavior and development (Elder et al., 2003). We specifically focused on regional context in Study 3, by exploring how local levels of support for LGBT individuals within these different regions may be related to how these adults present themselves to potential partners.

In recent years the US has seen a broad cultural shift toward greater acceptance of LGBT people and relationships, with a record 60% of Americans now in favor of same-sex marriage (up from 35% in 2001; McCarthy, 2015) and a historic Supreme Court ruling in 2015 that legalized same-sex marriage in all 50 states. Additionally, 92% of LGBT adults report that society has becoming more accepting of them in the past decade and an equal percent report expecting that acceptance to grow in the coming decade (Taylor, 2013). Yet, this cultural shift may not affect all LGBT adults equally.

Gay and lesbian older adults were entering adulthood when the gay rights movement rose to national prominence in the late 1960s (current 65 year-olds would have been approximately 18 years old at the time of the Stonewall riots in 1969). The historical period in which these adults came of age and realized their sexual and personal identities was an environment of intense stigma, and this may have affected their attitudes towards their own identities as well as their attitudes toward forming relationships.

Although gay and lesbian couples can now marry in the United States, different regions of the country still have markedly different attitudes toward gay and lesbian rights. In the current heightened political climate, new stories regarding challenges to LGBT rights are highly publicized, like a recent law in North Carolina which denies individuals who identify as LGBT legal protection against discrimination (Phillips,

2016). Challenges to LGBT rights are still commonplace in parts of the country, reflecting social and political climates in those areas that are less accepting of gay and lesbian people and relationships. Therefore, dating as an LGBT older adult may be different depending on the social and political climate of the community, and dating profiles may reflect these differences.

OTHER FACTORS ASSOCIATED WITH DATING PROFILES

In addition to age, gender, and sexual orientation differences, as well as the influence of context, there are other factors that may contribute to how adults present themselves in online dating profiles. For example, there may be differences in dating motivations and profile content among individuals who have different ethnic or racial identifications. The literature has rarely addressed such differences in dating preferences or behaviors (for a recent exception, see Potârcă, Mills, & Neberich, 2015) and when racial or ethnic preferences have been presented, such studies often focus on racial/ethnic preferences for potential partners as a function of one's own racial/ethnic identification. Yet, the literature does suggest that individuals from different racial/ethnic backgrounds may have different relationship motivations and expectations, which may be reflected in their profile content. For example, researchers report that Black and Hispanic emerging adults are less likely to report expectations for marriage than their White counterparts (Crissey, 2005; Gassanov, Nicholson, Koch-Turner, 2008; Manning, Longmore, & Giordano, 2007). It may be the case that individuals of different racial or ethnic identities may hold different motivations toward dating as well. Though we do not have specific hypotheses regarding differences in profile content as a function of ethnicity, we adjust for potential ethnic differences in each of the current studies.

Similarly, it may be the case that adults of different education levels will have distinct motivations or ways of constructing self-presentations. Although the dating literature has addressed assortative mating among online daters of similar educational backgrounds (Hitsch, Hortaçsu, & Ariely, 2010), we are not examining matching among online profile writers in the current studies and therefore, this literature is less relevant. Yet, the literature does address education differences in the desire to marry (Mahay & Lewin, 2007), so it is possible that education level may be related to how individuals approach dating. Further, because we are focusing on written profile content in each of the studies, we may see education differences in the language used by profile writers. Again, we have no specific hypotheses regarding differences in profile content by educational attainment, but we will consider education as an adjustment variable in the current studies.

Further, it is likely that parents may have different motivations for dating or different profile content than individuals without children. Research suggests that an individual's personal history, including the presence of children, is likely to influence views and expectations one holds when beginning new romantic relationships (Poortman & Mills, 2012). For this reason, we control for the effect of parental status in the first two studies (parental status was not collected in the dataset utilized for Study 3).

THE CURRENT STUDIES

This dissertation drew on two large datasets: Study 1 and Study 2 utilized a dataset of 4000 online dating profiles of gay, lesbian, and heterosexual adults of ages 18-91 drawn from two popular dating websites and five major cities across the US. These data contain the written profile content of the online profiles, as well as coding data from the profile photographs. As such, the method sections of Study 1 and Study 2 share a

great deal of overlap, with the exception of sections on written profile content and photo coding, as each study examined different aspects of the written content and photographs.

Study 1 examined the degree to which individuals focus on the self in their dating profiles and also to what extent they focus on their connections to others. We expected individuals' focus on the self and others in their profiles and photographs to reflect motivations associated with age, gender, and sexual orientation. Broadly, we expected older adults and women to focus more on close connections, while younger adults would be more self-focused. Further, we expected sexual orientation differences in the extent to which adults emphasized different aspects of their social networks. We expected heterosexual adults to focus more on family and gay and lesbian adults to focus more on close friendships.

Study 2 examined how individuals present their bodies and sexuality in their dating profiles, both in written descriptions and in profile photographs. We expected that adults would be likely to display their body and discuss their sexuality insofar as they perceived that such displays would attract potential partners. Based on a social exchange perspective, we expected that heterosexual women and gay men would be most likely to display their bodies to potential partners. Further, we expected younger adults to be more focused on the body and sexuality compared to older adults.

In Study 3, we draw on a separate dataset of publicly available online dating profiles. In this dataset, we collected only the profiles of gay, lesbian, and heterosexual adults over the age of 60 from ten US cities with differing levels of structural support for LGBT individuals. Study 3 provides an in depth look at dating self-presentations through a quantitative content analyses to identify the most prevalent themes across the dating profiles of older adults. Further, we examined how these profiles differ between

heterosexual adults and adults seeking same-sex relationships, and how self-presentations may differ among adults living in environments with higher or lower LGBT support.

Lastly, it is important to note that for the purposes of this dissertation, we were only able to gather online dating profiles from individuals that identified as male or female and were seeking male or female partners (the websites do not provide more than two gender labels for individuals and profiles writers can only search for desired partners by those two gender labels). Therefore, we were not be able to specifically distinguish transgender individuals in the current studies. Similarly, individuals on these websites can only search for desired partners by one gender at a time (“man seeking woman,” not “man seeking man or woman”). Therefore, we were also not able to distinguish bisexual individuals in the current studies. This means that we refer to individuals as ‘gay,’ ‘lesbian,’ and ‘heterosexual’ based on the fact that profiles are necessarily indicated as “man seeking man,” “man seeking woman,” “woman seeking woman,” or “woman seeking man.” This is not to say that the data may not include bisexual or transgender individuals, just that we were not be able to differentiate them given website constraints. It may be useful to note however, that due to the random sampling technique, bisexual and transgender individuals are likely to be evenly distributed throughout the overall sample.

Another note on terminology: the terms *gender* and *sex* have disparate definitions, though they often are used interchangeably. Sex refers to a person’s biological status, as indicated by chromosomal make-up or secondary sexual characteristics. Gender refers to attitudes, feelings, and behaviors that a given culture associates with a person’s biological sex (American Psychological Association, 2011). This distinction is especially relevant when differentiating between sexual orientation and gender, as using the term sex to refer to a male/female distinction can be misinterpreted as referring to sexual behavior.

Therefore, it is generally considered more precise to use the term gender (Rothblum, 1991). Consequently, for the purposes of this dissertation the term gender is used to refer to one's status as male or female.

STUDY 1

Study 1 Abstract

Although online dating is ubiquitous for adults of all ages and sexual orientations, we know little about the dating motivations and self-presentations of older adults and sexual minorities. Dating profiles may reveal differences in the extent to which adults focus on personal concerns and identity versus close connections and integrating a partner into existing social ties. The current study examined 4,000 online dating profiles of gay, lesbian, and heterosexual adults ages 18 to 91. Written profiles were analyzed for words reflecting self and other using the Linguistic Inquiry and Word Count software (LIWC; Pennebaker, Booth, & Francis, 2007) and profile photographs were coded for the use of selfies and group photos. Regressions revealed age, gender, and sexual orientation differences. Younger adults and women focused on the self in both written content and photographs. Older adults were more likely to use other-focused language, whereas younger adults were more likely to post photographs with others. Further, heterosexual adults focused on connections to family, whereas gay and lesbian adults focused more on connections to friends. Findings suggest that adults with different characteristics may have distinct displays in dating profiles regarding the self and close others when seeking a partner.

Keywords: online dating, older adults, romantic relationships, aging, LGBT, sexuality

Study 1 Introduction

Online dating has become a ubiquitous way to meet a romantic partner. In recent years, spurred by changing age demographics and increased attention to LGBT issues, scholars have begun to explore the online dating profiles of older adults and sexual minorities (e.g. Alterovitz & Mendelsohn, 2009, 2013; Davis & Fingerman, 2016; McIntosh, Locker, Briley, Ryan, & Scott, 2011; Menkin, et al., 2015; Morgan, Richards, & Van Ness, 2011). Importantly, how individuals present themselves in their online dating profiles may offer information about the distinct values and relational motivations that shape individuals' dating lives. The current study asked how individuals' dating profiles may reflect their broader motivations toward the self and others when attracting romantic partners.

Theoretical perspectives suggest two key motivations may guide individuals' interactions in the social world, broadly described here as self-focus and other-focus. These concepts have been addressed over decades of research, sometimes referred to as agency and communion (Bakan, 1966), autonomy and relatedness (Ryan & Deci, 2000) or competence and warmth (Cuddy, Fiske, & Glick, 2008; Judd, James-Hawkins, Yzerbyt, & Kashima, 2005). Regardless of the specific terminology, each scholarly tradition describes motivations to experience fulfillment through either independence and individual achievement or connectedness and belonging. These concepts are relevant to the formation of new romantic relationships as they may guide how individuals construct their dating profiles.

We examined both the photos and written descriptions of online dating profiles to compare how adults of different ages, genders, and sexual orientations construct their

profiles across two dimensions: the degree of self-focus and the emphasis on connections with others.

SELF-FOCUS IN ONLINE DATING PROFILES

Self-focus in written dating profiles is typified by the use of first person singular pronouns (I, me, my; Pennebaker, Mehl, & Neiderhoffer, 2003). Self-focus in photographic presentations is highlighted by the posting of a selfie, or self-taken photographs that individuals share with others via social networks, text messages or other formats (Selfie, 2017). Notably, selfie posting behavior has been linked to narcissism and excessive self-focus in social media profiles (Kim & Chock, 2016; Sung, Lee, Kim, & Choi, 2016; Weiser, 2015). Yet, a focus on the self is not uncommon in online dating profiles because daters use their profiles to display and describe themselves in order to appeal to potential partners (Fiore et al, 2008). However, the extent to which an individual is self-focused in their profile may vary based on age, gender, and sexual orientation.

Age differences

The broad motivations individuals hold regarding themselves and their relationships to close others may guide how they approach the development of romantic partnership. Individuals may experience two distinct goals, the desire to define oneself in a romantic relationship versus the desire to bring a partnership into an existing social network. These motivations are likely to differ by age. Developmental theories point to young adulthood as a stage of life where individuals are motivated to establish their identity and independence, as well as find a foothold in adult roles (Arnett, 2000). Numerous studies find that younger adults are more focused on goals related to autonomy than older adults (Hoppmann & Blanchard-Fields, 2010; Lang & Carstensen, 2002).

Conversely, older adults are less focused on the self, as their self-concept and identity are more established, more positive, and less variable (Rice & Pasupathi, 2010). Indeed, in previous examinations of language, younger adults typically have a greater focus on the self, while older adults have a lower self-focus (Davis & Fingerman, 2016; Groom & Pennebaker, 2005; Pennebaker & Stone, 2003; Rice & Pasupathi, 2010; Schwartz et al., 2013; Tausczik & Pennebaker, 2010). It is likely that we will observe similar age differences in self-focused language in the current study.

With regard to profile photographs, it appears that younger adults are more likely to post selfies to their social media profiles (Dhir, Pallesen, Torsheim, & Andreassen, 2016). Research suggests that selfies can function as a form of self-promotion and attention-seeking on social media (Qiu, Lu, Yang, Qu, & Zhu, 2015; Sung et al., 2016). Therefore, posting selfies may be especially likely for profile writers given that dating profiles are a context where individuals are seeking to grab the attention of potential partners and communicate information about themselves as individuals.

Thus, we expected younger adults would be more likely to post selfies in their online dating profiles. However, it is important to note that a greater use of selfies by younger adults also may reflect a cohort effect, not an effect of age per se, as younger generations are more likely to post pictures online (Rainie, Brenner, & Purcell, 2012) and use social media and smartphones in general (Perrin, 2015; Smith, 2015).

Gender differences

When seeking a new partner, women may be more motivated than men to present themselves favorably, and this may result in more self-focused language in their dating profiles. Scholars posit that women are more concerned with how they are perceived by others and place greater priority on creating positive impressions (Haferkamp, Eimler,

Papadakis, & Kruck, 2012; Kuo, Tseng, Tseng, & Lin, 2013). Another study found that women are more likely than men to describe their personal interests and personality in dating profiles (Whitty, 2008).

In line with this greater focus on highlighting oneself in dating profiles, previous research shows women are more likely to use self-focused language across a variety of contexts (Mehl & Pennebaker, 2003; Newman, Groom, Handelsman, & Pennebaker, 2008; Schwartz et al., 2013). A greater focus on the self also extends to online dating profiles, in both younger and older women (Davis & Fingerman, 2016; Fiore et al., 2008; Groom & Pennebaker, 2005). Therefore, we expected women in the current study would have a greater degree of self-focused language than men.

With regard to photographic displays in profiles, researchers report that women are more likely to take and post selfies to social media profiles than men (Dhir et al., 2016; Haferkamp et al., 2012; Qiu et al., 2015). Additionally, research suggests that selfie-posting is viewed by social media users as more normative among women compared to men (Williams & Marquez, 2015). Further, women may be especially drawn to selfies because they allow individuals to create, adapt, and edit their self-presentations. Therefore, we expected that women in the current study would be more likely than men to post selfies to their online dating profiles.

Sexual orientation differences

Though the literature does not suggest sexual orientation differences in a focus on identity or broader personal goals when seeking a romantic partner, we may still observe differences in the language used across dating profiles. One study found that heterosexual adults had more self-focused language in their dating profiles compared to gay and lesbian adults (Groom & Pennebaker, 2005). The authors suggested that these differences

in self-focused language likely reflect the tendency of heterosexual adults to use pronouns to create a contrast between themselves and their desired partner by emphasizing “me” versus “him” or “her.” Conversely, gay and lesbian adults may use self-focused pronouns to a lesser degree because they emphasize similarities between themselves and potential partners more so than heterosexual adults. Based on this finding, we expected to see a similar pattern of self-focus in the current study.

Heterosexual adults may be more likely to post selfies because selfies themselves are a cultural artifact (Senft & Baym, 2015), and they may reflect a broader culture of heteronormativity. Though speculative, heterosexual adults may simply feel more comfortable posting selfies because the majority of selfies they see are of heterosexual individuals. Unfortunately, research on selfie posting among gay and lesbian adults is scarce; many studies that examine the photographs in online profiles are restricted to heterosexual adults (e.g. Hancock & Toma, 2009; Sritharan, Heilpern, Wilbur & Gawronski, 2010) or the sexual orientation of users is not reported (Dhir et al., 2016; Eftekhar, Fullwood, & Morris, 2014; Hum et al., 2011; Kapidzic & Herring, 2015; Krämer et al., 2017; Siibak, 2010; Qiu et al., 2015). One study found that gay men were more likely than heterosexual or bisexual men to post a photo of any type to their online dating profiles (Lever et al., 2010). Thus, we speculated that heterosexual adults and gay men may be more likely to post selfies than lesbian women.

FOCUS ON CONNECTIONS TO OTHERS IN ONLINE DATING PROFILES

In addition to a focus on the self, individuals seeking a new relationship may focus on connections to friends and family in their profiles. A focus on close connections and social ties may reflect broader relational goals that are likely to differ as a function of age, gender, and sexual orientation. A focus on connections to others in written

descriptions is typically displayed via the use of first person plural pronouns (we, us, our) or the use of words focusing on social relationships (family, friends; Pennebaker et al., 2003; Pennebaker & Stone, 2003). Likewise, a focus on others in photographic aspects of dating profiles involves group photos, or photos that include the profile writer and others.

Age differences

Whereas younger adults display a greater self-focus in dating profiles, older adults appear to focus more on connections to others. Developmental theories suggest that that with age, adults become more focused on generativity and the needs of the next generation (An & Cooney, 2006; Grossbaum & Bates, 2002). In keeping with this idea, research finds that older adults are less concerned with identity than younger adults and more concerned with goals related to other people (Sheldon & Kasser, 2001).

Additionally, socioemotional selectivity theory suggests that as individuals age, their time horizon shrinks and they begin to prioritize close, emotionally rewarding relationships such as those with family and close friends (Charles & Carstensen, 2010). Further, research demonstrates that older adults place a greater stake in family and become more motivated to devote time to extended family relationships as they age (Segrin & Flora, 2011).

Previous studies reveal that older adults do tend to focus more on connections to others and are more likely to mention relationships to family and friends in written portions of online profiles, whereas younger adults are less likely to do so (Schwartz et al., 2013; Pennebaker & Stone, 2003). Further, scholars hypothesize that individuals who use greater percentages of words related to social relationships and connectedness likely place a greater value on those close ties and may have higher levels of social integration or more robust social relationships (Pressman & Cohen, 2007).

Further, a study of online dating profiles found older adults used greater percentages of first personal plural pronouns and placed greater emphasis on close social network partners such as family members in their written profile descriptions (Davis & Fingerman, 2016). This may reflect a desire to bring a dating partner into one's broader network. These increases in other-focused language with age are consistent with age-related differences in motivations towards social relationships. Yet, to our knowledge, no research has analyzed the content of online dating photographs of adults of different ages to see if a greater emphasis on connections among older adults is represented in photographs.

Much of the research on photographs in online profiles is conducted with young adults, so we have little information regarding older adults' photos online. In one study of the use of Facebook among adults of different ages, researchers found that older adults engaged in more family activity, including posting more pictures of themselves with family (McAndrew & Jeong, 2012). As such, older adults may be more likely to post group photos in the current study. Conversely, we may see that younger adults are more likely to post group photos, as younger adults are more likely to post pictures online in general (Rainie et al., 2012).

Gender differences

Women are generally more likely than men to focus on close relationships, and this focus on close others may extend to women's dating profiles. Sociocultural theories suggest that women are more likely than men to define themselves in terms of close relationships (Cross & Madson, 1997). Further, scholars note that women have been socialized to act in a communal manner, focusing on connections to others and interpersonal concerns (Eagly, 1987). Moreover, middle aged and older women in

particular may be key figures in their social networks, helping to maintain family ties or serve as a “kinkeeper” (Brown & DeRycke, 2010). Therefore, when describing themselves to potential partners, women may be more likely to discuss their close relationships.

Research finds that women do use more social words in online self-presentations (Pfeil, Arjan, & Zaphiris, 2009). In a study of online dating, women mentioned family and friends in their profiles more than men (Davis & Fingerman, 2016). However, that study also reported that men were actually more likely to use first-person plural pronouns (we, us, our), which also indicates a focus on connections to others. Yet, other studies report no gender differences in the use of first person plural pronouns (Groom & Pennebaker, 2005, Newman et al., 2008; Pennebaker et al., 2003). Overall, we expected women to be more likely to mention connections to family and friends and to use other-focused pronouns more than men in their dating profiles.

With regard to gender differences in photo self-presentations, findings are limited. One study of Facebook profile photos found that young women were more likely than young men to have a profile photo that contained friends, yet men and women were equally likely to have a profile photo that contained family (Strano, 2008). The researchers noted that although both genders place some importance on group displays in their profiles, women may be more likely to photographically self-define through their relationships and to use photos to represent the variety of their social relationships. Another study of Facebook use among adults of all ages found that women were more likely than men to post pictures with family members (McAndrew & Jeong, 2012). Thus, although studies of gender differences in photographs in online profiles are scarce, we expected women in the current study to be more likely to post a photo containing other people.

Sexual orientation differences

When crafting an online dating profile, individuals are likely to discuss their close relationships, yet depending on the composition of their social network they may emphasize family or friends to a greater degree. Though broader motivations towards connections with others are not likely to vary by sexual orientation, research does point to different social network compositions between heterosexual and gay and lesbian adults. Some research suggests that gay and lesbian adults are less likely to receive social support from family (compared to friends) or may have fewer or more ambivalent relationships with biological family (Barker, Herdt, & de Vries, 2006; Dorfman et al., 1995). Due to strain in family ties, they may prioritize supportive close friendships (or ‘families of choice’), likely with other LGBT adults (Barker et al., 2006; Grossman et al., 2000). Importantly, these studies were conducted more than a decade ago. Given recent trends towards greater acceptance of LGBT individuals in the US, the younger cohort of gay and lesbian adults may still retain close ties to their families.

Scholars also suggest that age-related changes in motivation and emotion regulation may help to explain social network differences between older heterosexual and gay adults. Socioemotional selectivity theory suggests that as adults age, they prioritize emotionally rewarding relationships over novel social relationships (Charles & Carstensen, 2010). Grossman and colleagues (2000) found that the social networks of older gay men and lesbian women were made up of a majority of close friends compared to other relationship types, such as family. The authors suggested that an emphasis on friendships in gay and lesbian older adult populations was likely related to socioemotional changes that accompany aging, as these relationships are likely to provide the most emotional rewards for gay and lesbian adults. For heterosexual adults, the most emotionally rewarding relationships appear to be with family, followed by long-term

friendships (Carstensen et al., 2003; Sullivan, 2014). Thus, we expected older heterosexual adults would be more likely to emphasize family, while older gay and lesbian adults would be more likely to emphasize friends in their dating profiles.

Thus, given the research suggesting that gay and lesbian adults prioritize friendships while heterosexual adults prioritize family, we expected that both groups may be equally likely to post photos with others, though the relationships of these close others to the profile writer (family versus friend) would be impossible to delineate from the photo alone.

OVERVIEW OF THE CURRENT STUDY

The current study involved an examination of the photographs and written text of 4000 online dating self-presentations of men and women of different ages and sexual orientations. By collecting ecologically valid data from two popular online dating websites and five cities across the US, we were able to explore individuals' dating profiles as they occur in their real-life contexts. Further, by collecting text data from the profile writers in addition to coding profile photographs, we were able to observe the extent to which written descriptions may be similar to or different from photographs in the degree of self- and other-focus. We expected the following patterns regarding age, gender, and sexual orientation differences in these two dimensions of dating profile content:

Self-focus

We expected the following differences by age, gender, and sexual orientation. *Age.* Younger adults will have higher percentages of words in the first person singular pronoun category compared to older adults. Younger adults will also be more likely to have a selfie in their profiles. *Gender.* Women will show a higher percentage of words in

first person singular category and be more likely to post a selfie compared to men. *Sexual Orientation*. Heterosexual profile writers will have a higher percentages of words in the first person singular category and may be more likely to post a selfie compared to gay and lesbian profile writers. Broadly, we expect younger people, women, and heterosexuals to focus more on themselves in their online dating profiles.

Focus on connections to others

Age. Compared to younger adults, older adults will have a higher percentage of words in the first person plural category, as well as the categories for family and friends. We do not have clear predictions regarding a focus on others in photo self-presentations among older and younger adults. *Gender*. Women will have a higher percentage of words in the family and friends categories, and will be more likely to use first-person plural pronouns or post a photo with others, reflecting a greater focus on close ties. *Sexual Orientation*. Heterosexual adults will have higher percentages of words in the family category, whereas gay and lesbian adults will have higher percentages of words in the friends category. We do not predict sexual orientation differences in the likelihood of posting pictures with others or in the percentage of words in the first person plural category. Regarding potential interactions, we may find that older heterosexual adults will have higher percentages of words in the family category, whereas older gay and lesbian adults may have high percentages of words in the friends category.

Study 1 Method

SOURCE OF ONLINE DATING PROFILES

The sample of online dating profiles was collected from two popular dating websites. Websites were identified via internet search engines (Google, Bing, Yahoo, and Ask.com) using the search term “online dating.” Additionally, we consulted reports from

Experian Hitwise (a consumer behavior firm) and Google Zeitgeist (reports of most frequent search terms in a given year) to identify the most popular websites. Websites were excluded from consideration if they were marketed specifically to a “niche” audience (e.g. particular religious denominations, or a specific age group). We also limited the sample to websites in the United States and those that allow users to search for potential partners rather than those websites that show only a select number of potential partners based on a computer algorithm (e.g. eHarmony.com, Chemistry.com). After these exclusions, the two most popular websites were chosen for collection of dating profiles (eBizMBA, 2016).

Both websites allowed users to create and browse profiles for free (though one website charges a fee for users to communicate with each other). When constructing a profile, users are required to respond to fixed category questions and provide a short free-response description of themselves and what they seek in a romantic partner. There were slight differences between the websites in the instructions for the free response section. The first website instructed users to write a short description of who they are and what they are looking for, whereas the second website informed users that the free response description would constitute a “first impression” for potential partners.

In the current study, the number of words in the free response section for the two websites ranged from 30 to 1190 ($M = 115.99$, $SD = 111.94$). We did not collect profiles containing fewer than 30 words. In a prior study of online dating profiles, 5% of potential profiles were excluded based on this criteria (Davis & Fingerman, 2016).

PARTICIPANTS

The study included 2000 profiles from each of the dating websites using random quota sampling without replacement ($N = 4,000$ profiles). This sampling method requires

random sampling from pre-selected quotas; once selected, profiles are not returned to the selection pool to ensure they cannot be selected twice. Profiles were identified via website search filters for geographic location, age, gender of profile writer, and gender of potential partner.

Within each of the two websites, we collected equal numbers of profiles from gay men, lesbian women, heterosexual men, and heterosexual women. We also collected profiles equally between four age groups: 18–29 years ($n = 1,000$; $M = 25.00$, $SD = 3.17$), 30–49 years ($n = 1,000$; $M = 37.57$, $SD = 5.80$), 50–64 years ($n = 1,000$; $M = 55.31$, $SD = 4.08$), 65 years and older ($n = 1,000$; $M = 69.03$, $SD = 4.35$). We used these age stratifications to ensure a broad distribution of ages in sampling. However, in analyses we treated age as a continuous variable, as the 65 and older age group may incorporate up to three decades of late life. The final sample ranged in age from 18 to 91 years. A one-way analysis of variance (ANOVA) revealed no significant age differences between gay men ($M = 46.46$, $SD = 17.49$), lesbian women ($M = 46.19$, $SD = 17.39$), heterosexual men ($M = 47.12$, $SD = 17.38$), and heterosexual women ($M = 47.14$, $SD = 17.37$); $F(3, 3996) = 0.76$, $p = .519$.

To ensure a broad geographic distribution of profiles, we also pulled profiles in equal numbers from five major metropolitan locations, including rural, urban, and suburban areas: Atlanta, Chicago, Denver, Los Angeles, and New York City. These cities were chosen due to their large populations and locations in distinct regions of the country as recognized by the US Census (Northeast, South, Midwest, and West; U.S. Census Bureau, 2015). To collect profiles, we randomly selected zipcodes from each of the five cities. For each zipcode, we pulled up to 5 profiles from each age, gender, and sexual orientation subgroup for a total of 800 profiles from each area. A visual representation of the sampling method can be found in Appendix A.

It is important to note that profile writers on both websites are constrained in their selection of only one gender designation for themselves and for potential partners. This means that profile writers are limited to the following designations in their profiles: “man seeking man,” “woman seeking women,” “man seeking woman,” and “woman seeking man.” Therefore, individuals’ preferences for a same-sex partner via their online profile does not provide a clear designation of profile writers’ sexual identity, but it does at least provide an outward expression of their desire for a same-sex relationship. Due to this constraint, we collected profiles based on preferences for same or opposite sex partners, taking into account that bisexual and transgender individuals may be present in the sample (though they should be equally represented across the sample due to the random sampling technique).

From each profile, we extracted: gender of profile writer, gender of preferred partner, age, and the free response text portion of the profile. We also collected data on education, ethnicity, and parental status of profile writers to use as control variables (see Table 1 for sample characteristics). To protect the anonymity of profile writers, we did not collect other background characteristics such as religious affiliation, occupation, or prior marital status. Additionally research assistants coded, but did not collect, the photographs posted within individuals’ dating profiles.

PROFILE PHOTO CODING

We created a coding scheme relating to various dimensions of the photos and trained a team of three research assistants to independently code the profile photos. Interrater reliability was assessed throughout data collection via a meeting with the three research assistants to code 40 randomly-selected profiles, with 240 coded for reliability in

total. First the total number of photographs displayed in a given profile were counted. Next, the following dimensions were coded:

Selfies

Profiles were coded to see if they contained at least one selfie (1 = *At least one selfie*, 0 = *No selfies*). Selfie photos refer to self-portraits taken by individuals using their smartphone or digital camera (Qiu et al., 2015). The kappa coefficients for this dimension ranged from .85 to 1.0 across data collection with an average of .90.

Presence of other people

Profiles were examined to see if they contained at least one photo of the profile writer with other people (1 = *Profile contained at least one photo with other people present*, 0 = *Profile contained no photos of the writer with other people*). This code did not include solo pictures of the profile writer in public places (e.g. tourist locations or crowded places with random people in the background). The kappa coefficients for this dimension ranged from .81 to 1.0 across data collection with an average of .91.

Table 1

Study 1 Sample Descriptive Statistics

Variables	Age		Word Count		Number of Photos		Racial/ethnic minority	Bachelor's Degree	Parent
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Proportion	Proportion	Proportion
Full Sample	46.73	17.37	115.99	111.94	4.42	4.36	.42	.45	.42
Young Adults: 18-29	25.00	3.17	88.85	83.83	4.98	4.29	.63	.32	.14
Early Midlife: 30-49	37.57	5.80	118.61	108.07	5.51	4.47	.55	.46	.36
Late Midlife: 50-64	55.31	4.08	135.19	132.35	4.28	4.48	.34	.49	.55
Late Life: 65+	69.03	4.35	121.32	113.11	2.91	3.73	.19	.55	.63
Heterosexual Men	47.12	17.38	131.39	135.28	4.43	4.01	.39	.46	.52
Heterosexual Women	47.14	17.22	125.42	111.45	5.51	5.01	.40	.44	.60
Gay Men	46.46	17.49	99.56	89.96	3.75	4.05	.40	.49	.17
Lesbian Women	46.19	17.39	107.59	103.32	3.99	4.09	.51	.43	.38

PROFILE TEXT ANALYSIS

We used the Linguistic Inquiry and Word Count software (LIWC; Pennebaker et al., 2007) to analyze the text content of the online dating profiles. The software counts each word in a given text file and compares it to an internal dictionary of more than 4,500 words in the chosen content categories. The program then calculates the frequency and percentage of these categories of words within each text sample. The current study drew on four established LIWC categories that correspond to a focus on the self and others: first person singular pronouns (e.g., I, me, mine), first person plural pronouns (e.g., we, us, our), friends (e.g., buddy, pal, neighbor) and family (e.g., daughter, son, cousin). The LIWC software and dictionaries have been widely used for text analyses (see Tausczik & Pennebaker, 2010).

ANALYTIC STRATEGY

First, we examined potential differences in the dependent variables by website, ethnicity, education, and parental status using *t*-tests and chi-square tests. We found significant website differences in (a) the LIWC category of first person singular pronouns [$t(3998) = -1.96, p < .001$]; (b) the likelihood of posting a selfie [$\chi^2 = 14.46$; 54% of profile writers posted at least one selfie on Match.com vs. 60% of profile writers on POF.com] and (c) the likelihood of posting photos with others [$\chi^2 = 12.80$; 34% of profile writers posted at least one photo with others on Match.com vs. 29% of profile writers on POF.com]. These website differences may reflect disparities in instructions for profile construction and the fact that Match.com charges members to interact with one another while POF.com does not. Due to the number of significant website differences, we adjusted for the effect of website in the analyses by including a dummy coded covariate.

Additionally, we observed significant ethnic differences in (a) the LIWC category of first person singular pronouns [$t(3998) = -7.30, p < .001$]; (b) the LIWC category of friends [$t(3998) = 2.32, p = .020$]; (c) the likelihood of posting a selfie [$\chi^2 = 157.89$; 48% of white profile writers posted a selfie vs. 68% of other ethnicities]; and (d) the likelihood of posting a photo with other people [$\chi^2 = 121.59$; 39% of white profile writers posted a photo with others vs. 22% of other ethnicities]. Due to significant ethnic differences in the outcomes, we also adjusted for the effect of ethnic group membership in the analyses by including it as a dummy coded covariate (0 = *White*, 1 = *Ethnic or racial minority*).

We also observed significant education differences in five of six dependent variables: (a) the LIWC category of first person singular pronouns [$t(3743) = 10.51, p < .001$]; (b) the LIWC category of family [$t(3743) = 2.23, p = .026$]; (c) the LIWC category of friends [$t(3743) = -2.32, p = .020$]; (d) the likelihood of posting a selfie [$\chi^2 = 40.26$; 63% of profile writers without a bachelor's degree posted a selfie vs. 53% of profile writers with a bachelor's degree]; and (e) the likelihood of posting a photo with other people [$\chi^2 = 63.15$; 27% of profile writers without a bachelor's degree posted a photo with other people vs. 39% of profile writers with a bachelor's degree]. Due to significant education differences, we included education level as a dummy coded covariate in all subsequent analyses (0 = *No bachelor's degree*, 1 = *Bachelor's degree or higher*).

Lastly, we observed differences in the following dependent variables as a function of the profile writer's parental status: (a) in the LIWC category of first person singular pronouns [$t(3873) = 2.50, p = .012$]; (b) the LIWC category of family [$t(3873) = -13.07, p < .001$]; and (c) the likelihood of posting a selfie [$\chi^2 = 77.13$; 64% of profile writers without children posted a selfie vs. 50% of parents]. Due to significant differences by parental status, we included it as a dummy coded covariate in all subsequent analyses (0 = *Not a parent*, 1 = *Parent*).

Next, we examined descriptive statistics for the LIWC category percentages and photo coding scores among different subgroups in the sample (see Table 2). For hypothesis testing, we considered using multi-level models in the analyses, with profiles nested in geographic locations. An examination of intraclass correlations (ICCs) of each dependent variable revealed no evidence to suggest that variation was occurring in LIWC percentages or coding scores across regions; instead nearly all variation in the dependent variables was occurring across profile writers (Peugh, 2010). Therefore, we determined it was not necessary to use multi-level models.

Thus, for hypothesis testing, our analytic strategy was twofold: we conducted ordinary least squares (OLS) regression with LIWC category percentages as outcomes. For the photographic dimensions, we conducted binomial logistic regression, due to binary yes/no outcomes (DeMaris, 1995). In each set of analyses, we centered the age variable and used the centered age variable when creating interaction terms. In each analyses, we included all two-way interactions (Age X Gender, Age X Sexual Orientation, and Gender X Sexual Orientation) as well as the three-way interaction term (Age X Gender X Sexual Orientation). In the binary analyses for the photographic dimensions, we also included the total number of profile photos as a covariate, as individuals with more total profile photos were more likely to post a selfie ($B = 0.30, p < .001$, OR 1.35) and a photo with others ($B = 0.25, p < .001$, OR 1.29).

Table 2

Study 1 LIWC Category and Photo Coding Descriptive Statistics

	Self-focus			Other-focus						
	LIWC: 1 st Person Singular		Photograph: Selfie	LIWC: 1 st Person Plural		LIWC: Family		LIWC: Friends		Photograph: With others
	M	SD	Proportion	M	SD	M	SD	M	SD	Proportion
Full Sample ($n = 4000$)	9.02	4.00	.57	0.39	0.93	0.41	0.91	0.69	1.11	.31
Young Adults: 18-29	10.43	4.24	.80	0.34	0.91	0.32	0.80	0.55	0.97	.30
Early Midlife: 30-49	9.21	3.73	.77	0.38	0.89	0.41	0.92	0.69	1.11	.36
Late Midlife: 50-64	8.45	3.74	.49	0.42	0.93	0.43	0.90	0.77	1.15	.34
Late Life: 65+	7.99	3.84	.25	0.43	0.98	0.48	1.00	0.74	1.20	.25
Heterosexual Men	8.54	3.85	.57	0.45	1.01	0.43	0.92	0.53	0.94	.37
Heterosexual Women	9.26	3.81	.62	0.34	0.78	0.58	1.04	0.64	1.08	.40
Gay Men	8.71	4.11	.55	0.37	0.87	0.28	0.76	0.83	1.22	.23
Lesbian Women	9.57	4.14	.56	0.41	1.02	0.35	0.88	0.75	1.17	.26

Note. Means for LIWC categories are mean percentages of total profile words.

Study 1 Results

HYPOTHESIS TESTING

Self-focus

To test the hypothesis that younger adults, women, and heterosexual adults will have higher percentages of first person singular pronouns we ran a multiple regression with the corresponding LIWC category percentages as the dependent variables. We included age, gender and sexual orientation as independent variables (as well as all possible interactions) and covariates included website, ethnicity, education and parental status. Results revealed no significant two- or three-way interactions, so we dropped all interaction terms from the model. The subsequent analysis revealed three main effects, of age, gender, and sexual orientation on the percentage of words in the first person singular LIWC category. As expected, younger age was associated with a higher percentage of words in the first person singular LIWC category, reflecting a greater degree of self-focus among younger adults. Additionally, as expected, female profile writers had a higher percentage of first person singular pronouns in their dating profiles, suggesting a greater degree of self-focus compared to men (See Table 3, Column 1 for regression results). However, contrary to expectations, gay and lesbian adults had a higher percentage of profile words in the category of first person singular pronouns compared to heterosexual adults.

To test the hypothesis that young adults and women will be more likely to post a selfie to their profiles we conducted a binary logistic regression analysis with the selfie photo category serving as the dependent variable. We examined age, gender, and sexual orientation as independent variables (as well as interactions) and previously mentioned covariates. We did not observe a significant three-way interaction, so that interaction

term was dropped from the model. In the subsequent model, we observed a significant two-way Age x Gender interaction on the likelihood of posting a selfie (see Table 4 for beta coefficients and odds ratios). As can be seen in Figure 1, the probability of posting a selfie declines with age for men and women. However, at younger ages, women have a higher likelihood of posting a selfie than men, whereas at older ages men and women are equally likely (or unlikely) to post a selfie. Additionally, we observed a significant two-way Age x Sexual Orientation interaction on the likelihood of posting a selfie (see Table 4 for beta coefficients and odds ratios). As can be seen in Figure 2, the probability of posting a selfie declines with age for all adults. However, at younger ages, heterosexual adults have a higher likelihood of posting a selfie than gay and lesbian adults, whereas at older ages both groups are equally likely (or unlikely) to post a selfie.

Focus on connections to others

Next we tested hypotheses that older adults and women would have a greater percentage of words in each of the other-focused LIWC categories (first person plural pronouns, family, and friends). Additionally, we tested the prediction that gay and lesbian adults would have higher percentages of profile words in the friends category while heterosexual adults would have higher percentages of words in the family category. To do this, we ran three separate regressions with each LIWC category as the dependent variable. Independent variables of age, gender, sexual orientation, as well as their interactions and covariates were included in each model.

Table 3

OLS Regression Analysis Predicting Percentage of Profile Words in LIWC Categories by Age, Gender, and Sexual Orientation

	1 st Person Singular Pronouns		1 st Person Plural Pronouns		Family		Friends	
Variables	B	SE	B	SE	B	SE	B	SE
Intercept	9.53 ***	0.18	0.28 ***	0.05	0.43 ***	0.04	0.67 ***	0.05
Age	-0.05 ***	0.00	0.00 *	0.00	-0.00	0.00	0.01 ***	0.00
Gender ^a	-0.74 ***	0.13	0.13	0.09	-0.06 *	0.09	0.04	0.04
Sexual Orientation ^b	0.30 *	0.13	0.25 **	0.09	-0.09 **	0.09	0.12	0.04
Age X Gender	--	--	0.00	0.00	--	--	-0.00	0.00
Gender X Orientation	--	--	-0.16 **	0.06	--	--	0.20 **	0.07
Age X Orientation	--	--	-0.00 *	0.00	--	--	0.00	0.00
Covariates								
Website ^c	0.06	0.13	0.00	0.03	-0.09 **	0.03	0.02	0.04
Ethnicity ^d	0.07	0.14	0.06	0.03	-0.05	0.03	-0.02	0.04
Education ^e	-0.97 ***	0.13	0.04	0.03	-0.05 *	0.03	0.04	0.04
Parental Status ^f	0.25	0.15	0.01	0.04	0.36 ***	0.03	-0.08	0.04
R ²	.08		.01		.05		.02	
F	46.25 ***		2.18 *		27.82 ***		7.70 ***	

Note. N = 3633. Individuals with missing data for ethnicity, education, and parental status were dropped from the models.

^a0 = Female and 1 = Male. ^b0 = Heterosexual and 1 = Gay or lesbian. ^c0 = Match.com and 1 = POF.com. ^d0 = Non-Hispanic white and 1 = Racial/ethnic minority. ^e0 = No bachelor's degree and 1 = Bachelor's degree or higher. ^f0 = Not a parent and 1 = Parent.

*p < .05. **p < .01. ***p < .001

Table 4

Binary Logistic Regression Analysis Predicting Photo Categories by Age, Gender, and Sexual Orientation

Variables	Photograph: Selfies			Photograph: With others		
	B	SE B	e ^B	B	SE B	e ^B
Age	-0.07 ***	0.01	0.93	-0.00	0.01	1.00
Gender ^a	-1.08 ***	0.29	0.34	0.66 *	0.31	1.94
Sexual Orientation ^b	-0.66 *	0.29	0.52	-0.69 *	0.34	0.50
Age X Gender	0.02 ***	0.01	1.02	-0.01 *	0.01	0.99
Gender X Orientation	0.20	0.17	1.22	0.62	0.47	1.86
Age X Orientation	0.01 *	0.01	1.01	0.01	0.01	1.01
Three-way interaction	--	--	--	-0.02 *	0.01	0.98
Covariates						
Website ^c	0.31	0.09	1.36	-0.19 *	0.08	0.83
Ethnicity ^d	0.48 ***	0.09	1.61	-0.99 ***	0.09	0.37
Education ^e	-0.29	0.09	0.75	0.46 ***	0.09	1.59
Parental Status ^f	0.10	0.10	1.11	0.21 *	0.10	1.24
Total number of photos	0.27	0.01	1.31	0.26 ***	0.01	1.29
Constant	-0.81 ***	0.14	0.44	-1.62 ***	0.14	0.20
N	3633			3633		
-2 log likelihood	3496.89			3686.90		

^a0 = Female and 1 = Male. ^b0 = Heterosexual and 1 = Gay or lesbian. ^c0 = Match.com and 1 = POF.com. ^d0 = Non-Hispanic white and 1 = Racial/ethnic minority. ^e0 = No bachelor's degree and 1 = Bachelor's degree or higher. ^f0 = Not a parent and 1 = Parent.

*p < .05. **p < .01. ***p < .001

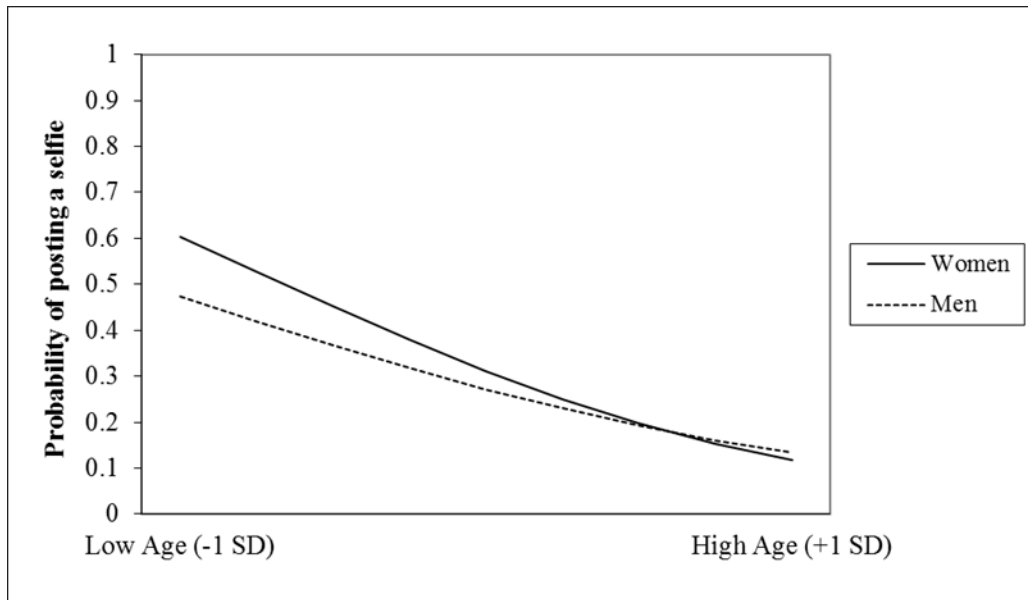


Figure 1. Interaction between age and gender on the probability of posting a selfie

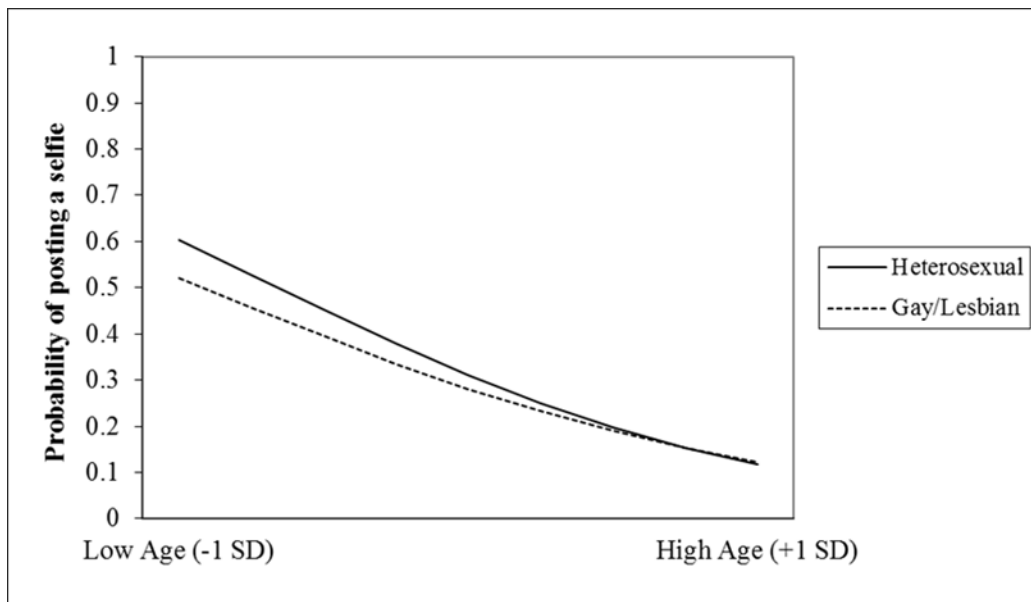


Figure 2. Interaction between age and sexual orientation on the probability of posting a selfie

For the analysis with the LIWC first person plural category as the dependent variable we observed significant two-way interactions involving: a) Age x Sexual Orientation and b) Gender and Sexual Orientation (see Table 3, column 2 for full regression results). As can be seen in Figure 3, sexual orientation significantly moderated the association between age and the percentage of words in the first person plural category, such that at younger ages gay and lesbian adults have a greater percentage of first person plural pronouns than heterosexual adults, but with age the sexual orientation difference narrows. As can be seen in Figure 4, gender significantly moderated the association between sexual orientation and the percentage of words in the first person plural category; the association between sexuality and the use of first person plural words is stronger for women, meaning that a same-sex orientation is more predictive of the use of first person plural words among lesbians compared to gay men.

For the family analyses, we did not find significant interactions, so these terms were dropped from the model (see Table 3, column 3 for regression results). Subsequent analyses revealed main effects of gender and sexual orientation, such that women and heterosexual adults had higher percentages of profile words in the family category.

For the friends analysis, we observed a significant interaction between gender and sexual orientation (see Table 3, column 4 for regression results). As seen in Figure 5, gender moderates the association between sexual orientation and the percentage of words in the friends category, such that gay and lesbian adults have a higher percentage of profile words in the friends category overall, but the difference between men and women is stronger among gay and lesbian adults compared to heterosexual adults. Additionally, we found a main effect of age, such that as the age of profile writers increased, so did the percentage of words in the friends category.

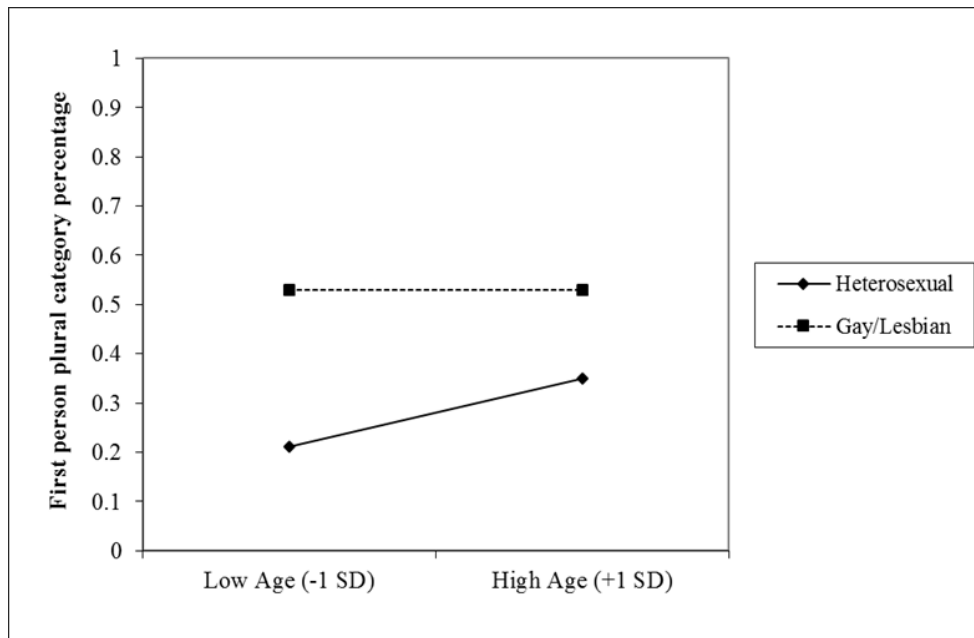


Figure 3. Interaction between age and sexual orientation on the percentage of profile words in the first person plural LIWC category

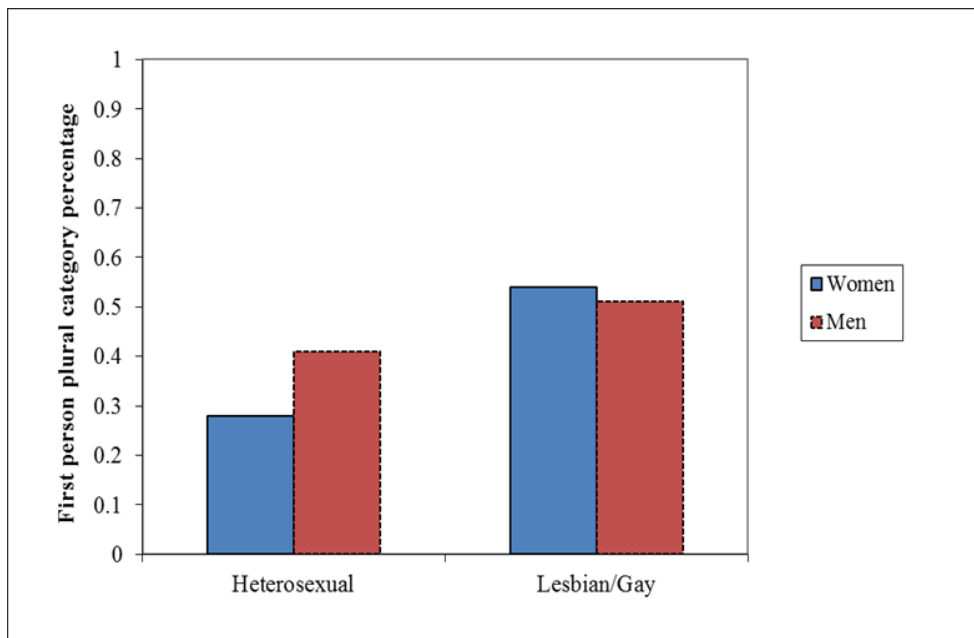


Figure 4. Interaction between gender and sexual orientation on the percentage of profile words in the first person plural LIWC category

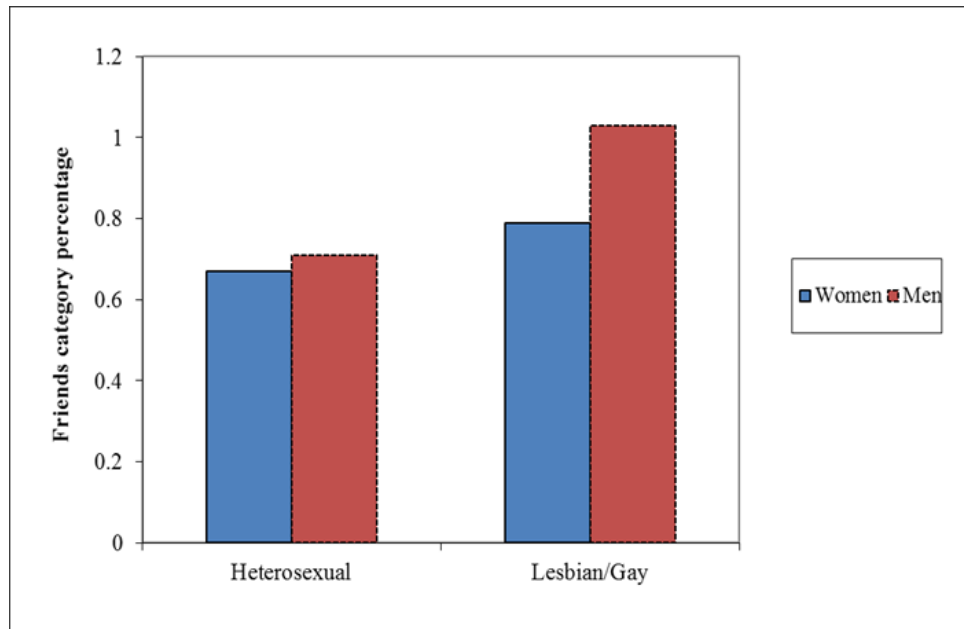


Figure 5. Interaction between gender and sexual orientation on the percentage of profile words in the friends LIWC category

To test the hypothesis that women would be more likely to focus on others in photos (we did not have clear age or sexual orientation predictions), we ran a binary logistic regression with the likelihood of posting a group photo predicted by age, gender, sexual orientation, interactions, and covariates. Results revealed a significant three-way interaction between age, gender, and sexual orientation on the probability of posting a group photo (see Table 4 for beta coefficients and odds ratios). As seen in Figure 6, heterosexual adults appear to have a greater likelihood of posting a group photo at lower and higher ages. Further, men of both sexual orientations have a higher likelihood of posting a group photo at younger ages, but this probability declines with age. Conversely, the likelihood of posting a group photo appears to remain relatively stable with age for women of both sexual orientations, and even shows modest increases at older ages.

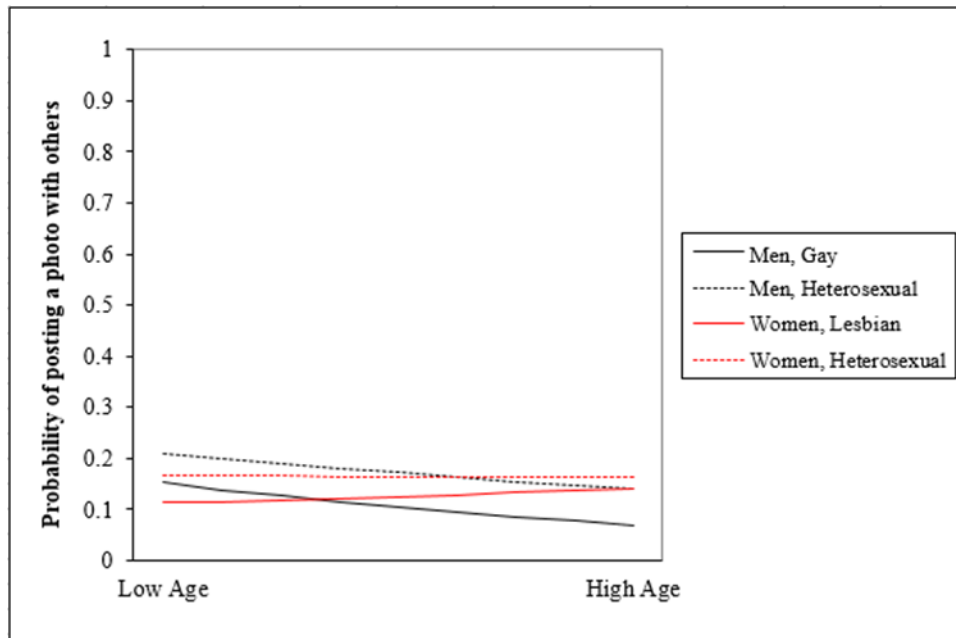


Figure 6. Interaction between age, gender, and sexual orientation on the probability of posting a group photo

Study 1 Discussion

Using online dating profiles from popular websites, the current study provides an ecologically valid investigation of how adults with different demographic characteristics convey information about themselves to potential romantic partners. Based on developmental and sociocultural theories we expected to find differences in a focus on the self and others as a function of age, gender, and sexual orientation. Consistent with predictions, older adults focused more on connections to others in their written profile content, whereas younger adults were more likely to have group photos. Heterosexual adults were more likely to discuss family in their profiles whereas gay and lesbian adults were more likely to talk about friends. Additionally, younger adults and women were more self-focused in both written content and photographs. Counter to predictions, gay

and lesbian adults were more likely to use self-focused language in their profiles. Overall these findings suggest that individuals with different characteristics employ different strategies when crafting their dating profiles.

DIFFERENCES IN SELF-FOCUS IN DATING PROFILES

Findings regarding self-focus in dating profiles generally supported the hypotheses, in written profile content, younger age was associated with a greater percentage of words in the first person plural category, suggesting a greater degree of self-focus among younger adults. This finding replicates prior work showing an age related decline in self-focused language across online and offline contexts (Arjan, Pfeil, & Zaphiris, 2008; Davis & Fingerman, 2016; Pennebaker & Stone, 2003; Schwartz et al., 2013). Further, as predicted, women demonstrated greater self-focus in written profile content, with higher percentages of words in the first-person singular category compared to men. Again, this finding aligns with predictions and replicates prior work examining gender differences in language that shows women are more likely than their male counterparts to use self-focused pronouns across contexts (Mehl & Pennebaker, 2003; Newman et al., 2008; Schwartz et al., 2013).

Younger adults and women also demonstrated a greater degree of self-focus in their photographs, evidenced by a higher likelihood of posting a selfie to their profiles. These main effects however, were qualified by an interaction suggesting the likelihood of posting a selfie was greater for women only at younger ages, whereas at older ages men and women were equally likely (or unlikely) to post a selfie. This makes sense given younger generations are more likely to post photos online (Rainie et al., 2012) as well as use social media and smartphones (Perrin, 2015; Smith, 2015).

Counter to expectations, gay and lesbian adults showed higher percentages of words in the first-person singular category than did heterosexual adults. By contrast, Groom and Pennebaker (2005) found the opposite pattern in a prior study of dating profiles. However, this study was conducted more than a decade ago, so cohort differences may also help to explain this discrepancy. The current cohort uses the internet more than later cohorts, and research suggests that gay and lesbian adults, in particular, use the internet as a means of sexual identity development (Lever et al., 2010). It may be the case that this contributed to the greater self-focus among younger gay and lesbian adults in the current study. Future work should seek to disentangle the association of sexual orientation in self-focus among online daters.

Though we didn't have strong predictions regarding sexual orientation differences, we observed that younger heterosexual adults were more likely to post selfies to their dating profiles than were younger gay or lesbian adults, though both groups did show declines in their likelihood of posting a selfie with age. This finding regarding higher selfies among younger heterosexual adults contrasts somewhat with the prior finding regarding a higher self-focus among gay and lesbian adults in their written profile content. It may be the case that younger heterosexual adults are more comfortable with selfies than younger gay and lesbian adults, or selfie posting may be more normative among younger heterosexual adults due to the popularity of selfies in a broader culture of heteronormativity. Future work should examine motivations for posting selfies among younger gay, lesbian, and heterosexual adults.

DIFFERENCES IN FOCUS ON CONNECTIONS TO OTHERS IN DATING PROFILES

Findings regarding a focus on connections to others were mostly in line with predictions, older adults were more likely to highlight their connections to others in the

written portion of their profiles, whereas younger adults are more likely to display connections in photos. This discrepancy between written and photo content could reflect a greater use of smartphones and photo technology among younger cohorts or it could reflect different strategies these adults have for appealing to potential partners.

In written profile content we saw a greater age-related increase in the use of first person plural pronouns among gay and lesbian adults compared to heterosexual adults. It could be that close social network members become even more salient in the lives of gay and lesbian adults as they age. Research suggests that social support from network members may be more meaningful for gay and lesbian older adults, who are more likely to face discrimination due to their sexuality (Masini & Barrett, 2008).

Further, on average, lesbian women and heterosexual men had higher percentages of first person plural words in their profiles compared to their opposite sex counterparts. It may be the case that individuals who are attempting to attract women as partners may focus on their connections to others in an attempt to appeal to the communal nature often associated with women (Eagly & Wood, 2012).

Yet gender differences emerged in a different way regarding the mention of family and friends. In line with predictions, women were more likely than men to mention family in their profiles. Women are socialized to be focused on family relationships (Eagly, 1987) and view relationships as central to their identities (Gilligan, 1982; Kroger, 1997; Peck, 1986), so this finding is not surprising. Also in accordance with predictions, heterosexuals were more likely to focus on family in their profiles than gay or lesbian adults, even controlling for parental status. This finding supports the idea that gay and lesbian adults are less focused on family relationships when seeking a romantic partner.

Indeed, gay and lesbian adults had higher percentages of profile words in the friends category overall, but gay men were especially likely to discuss friends in their profiles. This is consistent with prior research suggesting that gay and lesbian adults may have stronger ties to friends than family (Barker et al., 2006; Grossman et al., 2000), however the greater emphasis on friends among gay males is a novel contribution of the current study. This finding suggests that gay men may rely more on friends in their social network, whereas lesbians appear to have greater emphasis on family than gay men (though less than heterosexuals).

The results of the current study provide evidence that men and women of different ages and sexual orientations display themselves in distinct ways in their online dating profiles in order to attract potential partners. These differences are evident both in the language used in the written portions of their profiles, but also in the photos they post. Moreover, the age, gender, and sexual orientation differences in the current study are not always consistent across written and photo profile content, suggesting that these adults may strategically employ different aspects of their profiles in different ways.

LIMITATIONS AND FUTURE DIRECTIONS

Findings in the current study highlight the need to direct research attention toward the LGBT community in studies of dating and relationship formation as these processes are likely to differ between adults with different sexual orientations. Yet, it is important to note that gay and lesbian profile writers in this sample may not be representative of all gay daters (as we did not examine profiles from LGBT dating websites). Research suggests that early dating advertisements targeted to gay and lesbian adults differed from more mainstream outlets (Phua, 2002). If the norms on the websites in the current study are more in line with those of heterosexual daters, then sexual orientation differences

would likely have been larger if we compared heterosexual profiles to gay and lesbian profiles on a niche website.

Likewise, findings related to age differences may not generalize to all older populations, as the websites in the current study are mainstream websites used by adults of all ages (as opposed to websites specifically targeting older daters). Yet, with multiple outlets reporting that adults over the age of 50 (or 60) are the largest growing segment of adults using online dating websites (Ellin, 2014; Gonzaga, 2011, Match.com, 2005), it is likely that many of these adults are using mainstream websites to find partners. If anything, we may expect to find larger age differences if comparing younger adults to older daters using niche websites.

Despite these potential limitations, the current study has important implications for future research. Adults with more social ties experience better health and greater longevity compared to their more socially isolated counterparts (Umberson & Montez, 2010). Further, social relationships and social support serve important protective functions for the health of older and LGBT adults (Friedricksen-Goldsen et al., 2013; Lachman & Agrigoroaei, 2010). Therefore, a focus on romantic relationship formation in these populations helps to broaden our understanding of the unique goals and motivations of these individuals. Further, online dating may serve as a preferred method of relationship formation for older and LGBT adults (Rosenfeld & Thomas, 2012). Older adults may have limited opportunities to meet new partners and LGBT adults may be drawn to the internet to find partners due to its ability to help daters avoid sexual stigma in real-world dating interactions (Chiasson et al., 2006; Lever et al., 2008; Mahay & Laumann, 2004). A better understanding of these processes may inform future intervention work aimed at creating opportunities for relationships among socially isolated older or LGBT adults.

Moreover, there may be costs and benefits to using different strategies when crafting one's dating profile. For example, it may be advantageous for adults to post group photos to their dating profiles, as research shows that individuals in group photos on social media are viewed as more attractive than the same individuals isolated in one photo (Walker & Vul, 2014). Conversely, research suggests social media users evaluate selfies more negatively than photos of individuals taken by other people. Individuals in selfies were rated as less trustworthy, less socially attractive, and more narcissistic than the same individuals in photos taken by others. Lastly, individuals are more likely to respond to initial contact from a potential partner if the message contains fewer self-references (Schöndienst & Dang-Xuan, 2011). Future research should seek to examine whether or not these types of presentational strategies lead to different relationship outcomes.

To summarize, online dating is now a ubiquitous context for the formation of new relationships and older and LGBT adults are utilizing online dating websites in increasing numbers (Peplau & Fingerhut, 2007; Rosenfeld & Thomas, 2012; Stephure, Boon, MacKinnon, & Deveau, 2009). This study shows that adults use photographs and written descriptions in different ways to highlight themselves and their connections with others. These different strategies for crafting profiles may reflect broader motivations and goals for relationships associated with age, gender, and sexual orientation.

In Study 2, we examined how adults of different ages and sexual orientations present their bodies and sexuality in their dating profiles. Sexuality is a key function of romantic relationships and it is likely to be a factor in how adults construct their dating profiles. Adults of different ages and sexual orientations may have different motivations regarding sexuality or different ideas about how body displays may appeal to potential partners, and these differences may be reflected in their profile text and photographs.

STUDY 2

Study 2 Abstract

Most adults consider sexuality and physical intimacy an essential part of a romantic relationship. As such, potential daters are likely to include photos and written descriptions that highlight the body and sexuality in online dating forums. When crafting dating profiles, individuals are likely to tailor these aspects of their dating profiles to the desires of potential partners. The current study examined 4,000 online dating profiles of gay, lesbian, and heterosexual adults ages 18 to 91. We used the Linguistic Inquiry and Word Count software (LIWC; Pennebaker et al., 2007) to analyze profile text. Raters coded profile photographs for the presence of body photos, and the degree of body display. Results suggest that adults relied more on photos than text to communicate about their bodies, though lesbians were least likely to post a body photograph. The degree of body display was highest among heterosexual women and gay men, and declined for adults with age. Additionally, gay and lesbian adults used more sexual words in their profiles. Findings suggest that adults of different ages, genders, and sexual orientations may highlight their bodies and sexuality in different ways in their dating profiles.

Keywords: online dating, older adults, romantic relationships, aging, LGBT, sexuality

Study 2 Introduction

In the past few decades adults of all ages and backgrounds have turned to online dating websites to find romantic partners. Despite the prevalence of online dating among LGBT and older adult populations (Ellin, 2014; Harris Interactive, 2007; Lever et al., 2008), scholars have only recently begun to explore the dating motivations and self-presentations of these adults. Online dating profiles serve as a platform for adults to advertise themselves to potential partners and these self-presentations are vital to dating success. As such, individuals are strategic in the information they present, both in written descriptions (McKenna et al., 2002; Whitty, 2008) and in profile photographs (Makhanova et al., 2017). Sexuality and physical intimacy are an important aspect of romantic ties for most individuals (Regan, 2003; Sprecher & Cate, 2004; AARP, 2009). Yet, individuals may differ in the extent to which they emphasize their physical characteristics or their sexuality in online profiles. The current study examined the presentation of the body and sexuality in the dating profiles of adults of different ages, genders, and sexual orientations.

When constructing an online dating profile, users understand that they must advertise themselves as more appealing than potential alternatives. To stand out from other profile writers, individuals are motivated to present themselves as attractive and desirable (Hancock & Toma, 2009) and this may include self-presentations that highlight their body and sexuality. Indeed, prior research shows that potential partner's evaluations of a profile writer's physical attractiveness are the strongest predictor of the appeal of the dating profile as a whole (Fiore et al., 2008).

A focus on sexual concerns and physical characteristics in written self-presentations is exemplified through the use of words related to the body and sex (Rellini

& Meston, 2007; Tausczik & Pennebaker, 2010). Likewise, in photo self-presentations, individuals can choose whether or not to display a photo that shows their body (as opposed to photos showing only facial characteristics). Posting a photo that shows a profile writer's face is expected in online dating contexts, but individuals may differ in the extent to which they are likely to show their body in their profiles. If individuals do opt to show their bodies in their profile pictures, they also may differ in the degree to which their body is displayed (via the amount of skin shown or the clothing worn).

We expect that there will be age, gender, and sexual orientation differences in the extent to which individuals display sexuality and body in their dating profiles. According to social exchange perspectives, individuals advertise characteristics that they believe complement the desires of potential partners (Heino et al., 2010). Therefore, we expect individuals to construct their written profile descriptions and photographic self-presentations to highlight their bodies and sexuality based on what they perceive to be attractive to potential partners; that is individuals who wish to attract men (i.e. heterosexual women, gay men) may take a different approach than individuals who wish to attract women.

GENDER AND SEXUAL ORIENTATION DIFFERENCES

Various studies suggest that when seeking a partner, men (both gay and heterosexual) are more focused on the physical characteristics and sexuality of potential partners than women (Abramova, Baumann, Krasnova, & Buxmann, 2016; Deaux & Hanna, 1984; Hatala & Prehodka, 1996). As a result of this emphasis on sexuality and physical characteristics among men, heterosexual women and gay men may be particularly likely to advertise their physical characteristics and use sexual language in their dating profiles.

Among heterosexual dating couples, exchange theory would suggest that women are motivated to display sexual and physical characteristics in their written dating profiles, as an attempt to appeal to the desires of men. Indeed, studies report that compared to men, women use sexual language more than men in their self-presentations in written online dating profiles (Davis & Fingerman, 2016; Groom & Pennebaker, 2003). Prior to the use of dating websites, in written newspaper personal ads, women drew attention to their physical attractiveness and body shape more than men (Ahuvia & Adelman, 1992; Hirschman, 1987; Jagger, 2001).

Further, heterosexual women also are likely to emphasize their bodies in profile photographs. One study found that heterosexual women are especially likely to use profile photos as tools to highlight their physical attractiveness, likely due to the importance of physical attractiveness in the dating market and greater pressure on women to conform to societal standards of beauty (Hancock & Toma, 2009). In another study, heterosexual women were more likely to engage in body display in online social networking photos than lesbian women (Hall, West, & McIntyre, 2012). In sum, we expected heterosexual women to be more likely than heterosexual men to use body and sexual words as well as display their bodies in their profiles.

Further, scholars suggest gay men are likely to mention sexuality as well as discuss their own sexual interests and experience when seeking a partner (Child, Low, McCormick, & Cocciarella, 1996; Deaux & Hanna, 1984, Gonzales & Meyers, 1993, Hatala & Prehodka, 1996). Further, a study of the dating profiles of gay and heterosexual men found that gay men were more likely than heterosexual men and lesbian women to include sexual references in their profiles (Witter, Bunting, Katz, & Mannertorp, 2005).

Additionally, many scholars report a preoccupation with physical fitness, muscularity, and youthfulness within gay male culture that is not present in lesbian

culture (Miller, 2015; Murray & Adam, 2001; Swami & Tovée, 2008; Wierzalys, Barret, Pope, & Rankins, 2006). In line with these ideas, one study of men using a popular gay dating app suggests that men often mention their body type, fitness-level, or interest in the gym within their profiles (Miller, 2015).

Though studies of body display in online profile photographs among gay couples are scarce, one study suggests that gay men using websites and phone applications for dating and hook-ups often exchange body photographs (sometimes without including their face) as a way to connect with potential romantic or sexual partners (Gudelunas, 2012). Another study reported a high frequency of semi-clothed or shirtless photos in the online profiles of men on a dating app (Miller, 2015). Overall, when attempting to attract a partner, gay men may more likely to discuss their bodies and sexuality to potential partners than lesbian women or heterosexual men. They may also be more likely to post a body photo or display their bodies to potential partners.

Yet, some studies report only main effects of sexual orientation, such that gay and lesbian adults are more focused on the body and sex than heterosexual adults. For example, in one study of online dating profiles, gay men and women were more likely to include physical characteristics in their dating self-presentations compared to heterosexual men and women (Morgan et al., 2010). In an older study of newspaper dating ads, researchers reported that gay and lesbian adults were more likely than heterosexual adults to specify their weight (Gonzalez & Meyers, 1993). Further, another study of online dating profiles found that gay and lesbian adults used more sexuality and body-related words (Groom & Pennebaker, 2005).

Further, some studies focus on sexual orientation differences only among women. These scholars suggest that lesbian women are less likely than heterosexual women to mention physical characteristics in dating profiles. One study found that lesbians reported

body shape descriptors significantly less often than heterosexual women (Epel, Spanakos, Kasl-Godley, & Brownell, 1996). Another study of dating profiles found that lesbians were the least likely to offer physical descriptors compared to bisexual and heterosexual women (Smith & Stillman, 2002). Based on these studies, we may expect lesbians to be less likely than heterosexual women to focus on the body in their profiles.

Overall, it appears that individuals who seek to attract men (gay men and heterosexual women) are the most likely to emphasize physical characteristics and sexuality. In the written component of online dating profiles, we expected to see gay men and heterosexual women focus more on their bodies and sexuality compared to heterosexual men. We also expected that lesbians would be likely to focus more on the body and sexuality than heterosexual men, but less than heterosexual women. Thus, we expected to find greater use of sexual and body-related language among gay men, lesbians, and heterosexual women compared to heterosexual men in the current study.

AGE DIFFERENCES

There is limited research addressing age differences in a focus on the body and sexuality in dating self-presentations. Yet, broader literatures addressing body concerns and the importance of sexuality in the lives of adults of different ages help to inform predictions in the current study.

In self-presentations, online daters of all ages are motivated to present themselves as attractively as possible, while remaining accurate in their portrayals so as not to create confusion or disappointment in the event of a face-to-face meeting with a potential partner (Fiore et al., 2008). Based on exchange theory, profile writers have to weigh the potential relational costs or benefits of presenting their physical characteristics to other

daters. This decision is likely to be informed by their feelings and concerns about their bodies as well as their perceptions of the desires of potential partners.

We expected age differences in likelihood of discussing one's body in text or displaying one's body in photographs. Older adults may have concerns about their appearance due to physical changes that accompany aging (Martin, Leary, & Rejeski, 2000). Research suggests that among women, body dissatisfaction remains remarkably stable across the lifespan, but the self-reported importance of one's body and attractiveness declines with age among men and women (Tiggemann, 2004). Other research suggests that older adults hold less positive attitudes about their attractiveness compared to younger adults (Franzoi & Koehler, 1998). Thus, we expected older adults to be less likely to describe or display their bodies compared to younger adults.

The literature suggests that age differences in feelings about the body may be especially marked for gay men. Prior research shows that gay men express concerns in mid-life about a perceived decline in the appearance of their bodies (Lodge & Umberson, 2013). Other studies suggest that due to the preoccupation with youth and physical fitness in the gay male community, older single gay men report greater feelings of exclusion from the mainstream gay community as well as body image concerns and an internalized idea of their aging bodies as unattractive (Suen, 2015; 2017). These concerns may be associated with lower use of body-related words in online profiles as well as lower body display in photos.

However, another study suggests that some older gay daters may be likely to call attention to their bodies, using humor to make light of the body-related concerns associated with aging (Jönson & Siverskog, 2012). Further, from an exchange perspective, a strong emphasis on fitness and muscularity within the gay male community may place greater pressure on older gay men to display their bodies in order to attract a

partner. Based on these ideas, it is unclear whether older gay men will be more or less likely to use body words or display their bodies compared to other groups of older adults.

In contrast to the literature on older gay men, scholars suggest that older lesbian women (much like their younger counterparts) are not likely to be preoccupied with their bodies (Garnets & Peplau, 2006). Overall it appears that lesbians are less susceptible to the negative effects of cultural attitudes focused on youth, thinness, and beauty (Krakauer & Rose, 2002). Thus, older lesbians may be even less likely than other groups to focus on their bodies as they age, and this may be reflected in dating profiles.

However, the use of language referring to sexuality or sexual activity in written profile descriptions may not be subject to age related declines. Despite stereotypes that paint older adults as uninterested in sex, research shows that declines in sexual desire do not occur until well into the fifth decade of life and it is not until age 75 that the majority of older adults report low sexual desire (DeLamater & Sill, 2005; Schwartz, Diefendorf, & McGlynn-Wright, 2014). Further, research shows that older adults with romantic partners are sexually active (Waite, Laumann, Das, & Schumm, 2009). In support of the importance of sexuality in the lives of older adults, a prior study of dating profiles found no age differences in the use of sexual words in online profiles (Davis & Fingerman, 2016), suggesting that older adults who seek dating partners may be interested in sexuality. Based on these ideas, there may be no age differences in the use of sexual language in written profile content. There was no way to assess sexual intent in photographs (as distinct from portrayal of the body).

OVERVIEW OF THE CURRENT STUDY

In the current study, we analyzed the content of 4000 online dating profiles gathered from two popular dating websites in the US. We examined the written text of

profiles and the photographs to explore the degree to which profile writers emphasize their bodies and sexuality. By utilizing ecologically valid and publically available data, we are able to compare the content of dating profiles among adults of different ages, genders, and sexual orientations. We expected age and sexual orientation/gender group differences in a focus on the body and sexuality, as described below.

We expected that gay men and heterosexual women would display higher mean percentages of words in the body and sexual categories of written profile content. Similarly, we expected that gay men and heterosexual women would be more likely to post body photos, and have a higher degree of body display compared to heterosexual men and lesbians. Given the literature showing higher focus on sexuality and the body among individuals seeking same-sex partners, we expected lesbian women to have higher percentages of words in the body and sex categories compared to heterosexual men.

With regard to age, we predicted that older adults will be less likely to display a body photo in their profiles and will have a lower degree of body display. We also expect that older adults will have a lower percentage of words in the body category compared to younger adults, but there would be no age differences in the sexual category. Further, we expected a lower emphasis on the body among older lesbians compared to other groups.

Study 2 Method

SOURCE OF ONLINE DATING PROFILES

The sample of online dating profiles was collected from two popular dating websites. Websites were identified via internet search engines (Google, Bing, Yahoo, and Ask.com) using the search term “online dating.” Additionally, we consulted reports from Experian Hitwise (a consumer behavior firm) and Google Zeitgeist (reports of most frequent search terms in a given year) to identify the most popular websites. Websites

were excluded from consideration if they were marketed specifically to a “niche” audience (e.g. particular religious denominations, or a specific age group). We also limited the sample to websites in the United States and those that allow for users to search for potential partners rather than those websites that show only a select number of potential partners based on a computer algorithm (e.g. eHarmony.com, Chemistry.com). After these exclusions, the two most popular websites were chosen for collection of individual profiles (eBizMBA, 2016).

Both websites allowed users to create and browse profiles for free (though one website charges a fee for users to communicate with each other). When constructing a profile, users are required to respond to fixed category questions and provide a short free-response description of themselves and what they seek in a romantic partner. There were slight differences between the websites in the instructions for the free response section. The first website instructed users to write a short description of who they are and what they are looking for, whereas the second website informed users that the free response description would constitute a “first impression” for potential partners.

In the current study, the number of words in the free response section for the two websites ranged from 30 to 1190 ($M = 115.99$, $SD = 111.94$). We did not collect profiles containing fewer than 30 words. In a prior study of online dating profiles, 5% of potential profiles were excluded based on this criterion (Davis & Fingerman, 2016).

PARTICIPANTS

The study included 2000 profiles from each of the dating websites using random quota sampling without replacement ($N = 4,000$ profiles). This sampling method requires random sampling from pre-selected quotas; once selected, profiles are not returned to the selection pool to ensure they cannot be selected twice. Profiles were identified via

website search filters for geographic location, age, gender of profile writer, and gender of potential partner.

Within each of the two websites, we collected equal numbers of profiles from gay men, lesbian women, heterosexual men, and heterosexual women. We also collected profiles equally between four age groups: 18–29 years ($n = 1,000$; $M = 25.00$, $SD = 3.17$), 30–49 years ($n = 1,000$; $M = 37.57$, $SD = 5.80$), 50–64 years ($n = 1,000$; $M = 55.31$, $SD = 4.08$), 65 years and older ($n = 1,000$; $M = 69.03$, $SD = 4.35$). We used these age stratifications to ensure a broad distribution of ages in sampling. The final sample ranged in age from 18 to 91 years. A one-way analysis of variance (ANOVA) revealed no significant age differences between gay men ($M = 46.46$, $SD = 17.49$), lesbian women ($M = 46.19$, $SD = 17.39$), heterosexual men ($M = 47.12$, $SD = 17.38$), and heterosexual women ($M = 47.14$, $SD = 17.37$); $F(3, 3996) = 0.76$, $p = .519$.

To ensure a broad geographic distribution of profiles, we also pulled profiles in equal numbers from five major metropolitan locations, including rural, urban, and suburban areas: Atlanta, Chicago, Denver, Los Angeles, and New York City. These cities were chosen due to their large populations and locations in distinct regions of the country as recognized by the US Census (Northeast, South, Midwest, and West; U.S. Census Bureau, 2015). To collect profiles, we randomly selected zipcodes from each of the five cities. For each zipcode, we pulled up to 5 profiles from each age, gender, and sexual orientation subgroup for a total of 800 profiles from each area. A visual representation of the sampling method can be found in Appendix A.

It is important to note that profile writers on both websites are constrained in their selection of only one gender designation for themselves and for potential partners. This means that profile writers are limited to the following designations in their profiles: “man seeking man,” “woman seeking women,” “man seeking woman,” and “woman seeking

man.” Therefore, individuals’ preferences for a same-sex partner via their online profile does not provide a clear designation of profile writers’ sexual identity, but it does at least provide an outward expression of their desire for a same-sex relationship. Due to this constraint, we collected profiles based on preferences for same or opposite sex partners, taking into account that bisexual and transgender individuals may be present in the sample (though they should be equally represented across the sample due to the random sampling technique).

From each profile, we extracted: gender of profile writer, gender of preferred partner, age, and the free response text portion of the profile. For each profile, we also collected data on education, ethnicity, and parental status to use as control variables (see Table 5 for sample characteristics). To protect the anonymity of profile writers, we did not collect additional background characteristics such as religious affiliation, occupation, or prior marital status. Additionally research assistants coded, but did not collect, the photographs posted within individuals’ dating profiles.

PROFILE PHOTO CODING

To code the profile photos, we created a coding scheme relating to the body display in the photos and trained a team of three research assistants to independently code the profile photos. Interrater reliability was assessed throughout data collection via a meeting with the three research assistants to code 40 randomly-selected profiles, with 240 coded for reliability in total. First the total number of photos displayed in each profile were counted. Next, the following dimensions were coded:

Table 5

Study 2 Sample Descriptive Statistics

Variables	Age		Word Count		Number of Photos		Racial/ethnic minority	Bachelor's Degree	Parent
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Proportion	Proportion	Proportion
Full Sample	46.73	17.37	115.99	111.94	4.42	4.36	.42	.45	.42
Young Adults: 18-29	25.00	3.17	88.85	83.83	4.98	4.29	.63	.32	.14
Early Midlife: 30-49	37.57	5.80	118.61	108.07	5.51	4.47	.55	.46	.36
Late Midlife: 50-64	55.31	4.08	135.19	132.35	4.28	4.48	.34	.49	.55
Late Life: 65+	69.03	4.35	121.32	113.11	2.91	3.73	.19	.55	.63
Heterosexual Men	47.12	17.38	131.39	135.28	4.43	4.01	.39	.46	.52
Heterosexual Women	47.14	17.22	125.42	111.45	5.51	5.01	.40	.44	.60
Gay Men	46.46	17.49	99.56	89.96	3.75	4.05	.40	.49	.17
Lesbian Women	46.19	17.39	107.59	103.32	3.99	4.09	.51	.43	.38

Body photos

Profile photos were examined to see if they contained at least one photo of the profile writers' body (1 = *Profile contained at least one body photo*, 0 = *Profile did not contain body photos*). A body photo was defined as a photo showing more than the face, head, or shoulders of the profile writer. The kappa coefficients for this dimension ranged from .88 to 1.0 across data collection with an average of .95.

Degree of body display

If a participant had at least one body photo ($n = 2411$), then the profile was coded for the degree of body display. Some profile writers displayed several photos with varying degrees of body display. To measure the highest degree of body display present in a profile, research assistants coded only the photo with the highest degree of body display (if there was ambiguity between two photographs, assistants coded both photos and recorded the highest score). Photos were coded on a three-point scale (1 = *Low degree of body display*, 2 = *Moderate degree of body display*, 3 = *High degree of body display*). Photos received a code of 1 if the profile writer's body was mostly or completely covered by clothes (not showing skin on more than one of the following areas: arms, legs, or chest). Photos received a code of 2 if the profile writer's body was moderately covered by clothes (showing skin on more than one of the following areas: arms, legs, or chest). Photos received a code of 3 if the profile writer's body was only minimally covered by clothing (showing skin on more than two areas of the body; profile writer was shirtless or wearing minimal clothing such as a swimsuit or underwear).

In ambiguous cases, coders were instructed to take into consideration things such as tightness of clothing, angle of the photograph, facial expression, body positioning, or photo context. For example, if a male profile writer posted a picture of himself wearing a

loose tank top and shorts while at a restaurant with friends, the photo would receive a code of 2 (for showing skin on both legs and arms). However, a male profile writer who posted a photo of himself wearing a skin-tight tank top and shorts while flexing his muscles at the camera in a gym locker room would receive a code of 3 for high body display. Despite the presence of potential ambiguity in the photographs, there was a high degree of inter-rater reliability in these codes. The kappa coefficients for this dimension ranged from .82 to .97 across data collection with an average of .88.

PROFILE TEXT ANALYSIS

We used the Linguistic Inquiry and Word Count software (LIWC; Pennebaker et al., 2007) to analyze the text content of the online dating profiles. The software counts each word in a text file and compares it to an internal dictionary of more than 4,500 words in a variety of content categories. The program then calculates the frequency and percentage of these categories of words within each text sample. We drew on two LIWC categories: body and sexual. The LIWC software has been widely used for text and content analyses in the social sciences (see Tausczik & Pennebaker, 2010).

ANALYTIC STRATEGY

First, we examined potential differences in the dependent variables by website, ethnicity, education, and parental status using *t*-tests and chi-square tests. We observed website differences in three of the four dependent variables: (a) the likelihood of receiving a “yes” code for posting a body photo [$\chi^2 = 27.74$; 1124 profile writers posted at least one body photo on Match.com vs. 1287 profile writers on POF.com]; (b) the degree of body display [$t(3998) = -4.63, p < .001$]; and (c) the percentage of words in the sexual LIWC category [$t(3998) = -3.38, p < .001$]. These website differences may reflect the disparities in instructions for profile construction provided by the websites and the

fact that one of the websites charges members to interact with one another while the other does not. Due to significant website differences, we adjusted for the effect of website in the analyses by including it as a dummy coded covariate.

Additionally, we observed ethnic differences in one dependent variable. Independent *t*-tests revealed a significant difference between white profile writers (0) and other ethnicities (1) in the degree of body display [$t(2409) = -6.67, p < .001$]. Due to this difference, we also adjusted for the effect of ethnic group membership in analyses by including it as a dummy coded covariate (0 = *White*, 1 = *All other ethnic groups*).

We also observed education differences in three dependent variables: (a) the likelihood of receiving a “yes” code for posting a body photo [$\chi^2 = 19.65$; 59% of profile writers without a bachelor’s degree posted a body photo vs. 66% of profile writers with a bachelor’s degree]; (b) the degree of body display [$t(2322) = 2.51, p = .012$]; and (c) the percentage of words in the sexual LIWC category [$t(3743) = 3.14, p = .002$]. Due to significant education differences, we included education as a dummy coded covariate in all subsequent analyses (0 = *No bachelor’s degree*, 1 = *Bachelor’s degree or higher*).

Lastly, we observed differences in two of the four dependent variables as a function of the profile writer’s parental status: (a) the likelihood of posting a body photo [$\chi^2 = 6.06$; 62% of profile writers without children posted a body photo vs. 59% of parents] and (b) the degree of body display [$t(2369) = 4.25, p < .001$]. Due to these significant differences by parental status, we included it as a dummy coded covariate in all subsequent analyses (0 = *Not a parent*, 1 = *Parent*).

In analyses, we first examined descriptive statistics for the LIWC category percentages and photo coding scores among different subgroups in the sample (see Table 6). For hypothesis testing, we considered using multi-level models in the analyses, with profiles nested in geographic locations. An examination of intraclass correlations (ICCs)

of each dependent variable revealed no evidence to suggest that variation was occurring in LIWC percentages or coding scores across regions; instead all variation in the dependent variables was occurring across profile writers (Peugh, 2010). Therefore, we determined it was not necessary to use multi-level models in the analyses.

Thus, our analytic strategy was twofold: we conducted a separate two-way analysis of covariance (ANCOVA) with each of the LIWC category percentages as well as the ‘degree of body display’ photo code as outcomes. For each ANCOVA analyses, we treated age and gender/orientation as categorical variables. We included the interaction term between Age X Gender/Orientation and the previously described covariates.

For the analysis predicting whether or not a profile writer posted a body photo, we conducted binomial logistic regression, which is necessary for binary outcomes (DeMaris, 1995). We centered the age variable and entered it as a continuous variable and created dummy codes for the gender/orientation group variable, coding lesbian women, heterosexual women, gay men, and leaving heterosexual males as the reference group. We then created interaction terms using the centered age variable and each of the dummy coded gender/orientation groups (Age X Lesbian, Age X Heterosexual Female, and Age X Gay Male). For this model, we also included the total number of profile photos as a covariate, as individuals with more total profile photos were more likely to post a body photo ($B = 0.59, p < .001, OR 1.81$).

Table 6

Study 2 LIWC Category and Photo Coding Descriptive Statistics

	Body					Sexual	
	LIWC: Body		Body Photo (yes) Proportion	Degree of Body Display ^a		LIWC: Sexual	
	M	SD		M	SD	M	SD
Full Sample ($n = 4000$)	0.38	0.83	.60	1.68	0.79	1.55	1.93
Young Adults: 18-29	0.37	0.83	.66	1.88	0.82	1.61	2.06
Early Midlife: 30-49	0.33	0.69	.68	1.82	0.80	1.45	1.93
Late Midlife: 50-64	0.44	0.84	.59	1.59	0.75	1.53	1.83
Late Life: 65+	0.36	0.93	.49	1.34	0.61	1.61	1.88
Heterosexual Male	0.36	0.74	.65	1.58	0.77	1.12	1.63
Heterosexual Female	0.40	0.78	.68	1.76	0.76	1.69	1.80
Gay Male	0.37	0.88	.56	1.73	0.85	1.61	2.05
Lesbian Female	0.38	0.90	.52	1.66	0.76	1.78	2.10

Note. The degree of body display category has a lower total n than the rest of the categories in the table due to the fact that this category was only coded for individuals who posted a body photo ($n = 2411$). Means for LIWC categories are mean percentages of total profile words.

^a1 = *Low degree of body display*, 2 = *Moderate degree of body display*, 3 = *High degree of body display*.

Study 2 Results

HYPOTHESIS TESTING

The body category had a low overall base rate in the current study; on average across the sample the body category made up less than 5% of profile text (see Table 7). In a prior study of online dating profiles using the LIWC, the authors eliminated word categories with grand means lower than 5% from analyses, as they considered the categories not relevant to the overall dating profile (Groom & Pennebaker, 2005). But given the focus of this study, we tested this low frequency category.

To test the hypothesis that younger adults, gay men, and heterosexual women would have higher percentages of body words in their profiles, we conducted a two-way (Age X Gender/Sexual orientation) ANCOVA to test for mean differences in the percentage of words in the body LIWC category. Independent variables of age, gender/sexual orientation, as well as their interaction and covariates were included in the model. We did not observe gender/orientation effects or interactions between gender/orientation and age. However, we did observe a significant main effect of age on the percentage of body words ($F(1, 3363) = 4.20, p = .006$). Estimated marginal means for the percentage of words fitting the body and sexual LIWC categories are presented in Table 7. Bonferroni post hoc tests reveal that late midlife adults (aged 50-64) used a greater percentage of body words compared to early midlife adults (aged 30-49; $p = .004$). No other age groups significantly differed from each other.

To test other hypotheses that younger adults, gay men, and heterosexual women would have higher percentages of sexual words in their profiles, we conducted a two-way ANCOVA to test for mean differences in the percentage of words in the sexual LIWC category. Independent variables of age, gender/sexual orientation, as well as their interaction and covariates were included in the model. We did not observe a main effect

of age or interactions between gender/orientation and age. However, we did observe a significant main effect of gender/orientation on the percentage of sexual words ($F(1, 3363) = 20.46, p < .001$). Estimated marginal means of the percentage of words in the sexual LIWC category are presented in Table 7. Bonferroni post hoc tests reveal that heterosexual men had a significantly lower percentage of sexual words in their profiles compared to gay men, heterosexual women, and lesbians ($p < .001$ for each group compared to heterosexual males). No other gender/orientation groups significantly differed from each other.

Table 7

Estimated Marginal Means of LIWC Category Percentages by Age and Gender/Orientation Groups

	LIWC: Body	LIWC: Sexual
	<i>M (SE)</i>	<i>M (SE)</i>
<hr/> Gender/Sexual Orientation <hr/>		
Heterosexual Male	0.35 (0.03)	1.13 (0.06)
Heterosexual Female	0.42 (0.03)	1.65 (0.06)
Gay Male	0.35 (0.03)	1.64 (0.07)
Lesbian Female	0.37 (0.03)	1.77 (0.06)
Age Groups		
Young Adults (18-29)	0.35 (0.03)	1.56 (0.07)
Early Midlife (30-49)	0.32 (0.03)	1.47 (0.06)
Late Midlife (50-64)	0.45 (0.03)	1.54 (0.06)
Late Life (65+)	0.38 (0.03)	1.63 (0.07)

Note. Bolded cells represent main effects for those variables.

To test the hypothesis that younger adults, gay men, and heterosexual women would be more likely to post a body photo to their profiles we ran a binary logistic regression with the likelihood of posting a body photo as the outcome variable predicted by age, dummy codes for the gender/orientation group variable (with heterosexual males as the reference group), as well as interaction terms and covariates. We did not observe any interactions in initial analyses, so we removed the interaction terms from the model. Subsequent results revealed a significant main effect for the lesbian group, such that lesbians were less likely to post a body photo compared to heterosexual males (see Table 8 for beta coefficients and odds ratios).

Lastly, to test the hypothesis that younger adults, gay men, and heterosexual women would have a greater degree of body display in their profile photos, we conducted a two-way ANCOVA to test for mean differences in body display. Independent variables of age, gender/sexual orientation, as well as their interaction and covariates were included in the model. Results revealed significant main effects of age and gender/orientation on the degree of body display (estimated marginal means are displayed in Table 9). Post-hoc Bonferroni tests show that gay men had significantly higher mean body display scores compared to heterosexual men and lesbian women ($p = .05$ and $p = .003$, respectively), though they did not differ significantly from heterosexual women. Additionally, heterosexual women had significantly higher mean body display scores compared to heterosexual men ($p = .04$). There were no mean differences between lesbian women and heterosexual men or lesbian women and heterosexual women.

Table 8

Binary Logistic Regression Analysis Predicting Photo Categories by Age and Gender/Orientation Groups

Variables	Body Photos		
	B	SE B	e ^B
Age	0.00	0.00	1.00
Lesbian Female	-0.54 ***	0.13	0.58
Gay Male	-0.24	0.13	0.79
Heterosexual Female	-0.20	0.13	0.82
Covariates			
Website ^a	0.23 **	0.09	1.26
Ethnicity ^b	-0.01	0.10	0.99
Education ^c	0.27 **	0.09	1.31
Parental Status ^d	-0.06	0.10	0.94
Number of profile photos	0.57 ***	0.02	1.76
Constant	-1.38 ***	0.14	0.25
N		3633	
-2 log likelihood		3208.08	

Note. Heterosexual Male is the reference group.

^a0=Match.com and 1=POF.com. ^b0 = Non-Hispanic white and 1 = Racial/ethnic minority.

^c0 = No bachelor's degree and 1 = Bachelor's degree or higher. ^d0 = Not a parent and 1 = Parent.

*p < .05. **p < .01. ***p < .001

Table 9

Estimated Marginal Means of Degree of Body Display by Age and Gender/Orientation Groups

	Heterosexual Men <i>M (SE)</i>	Heterosexual Women <i>M (SE)</i>	Gay Men <i>M (SE)</i>	Lesbian Women <i>M (SE)</i>
Young Adulthood (Aged 18 to 29)	1.76 (0.06)	2.04 (0.06)	1.82 (0.07)	1.82 (0.07)
Early Midlife (Aged 30 to 49)	1.76 (0.06)	1.89 (0.06)	1.76 (0.06)	1.83 (0.06)
Late Midlife (Aged 50 to 64)	1.47 (0.06)	1.64 (0.06)	1.79 (0.07)	1.51 (0.07)
Late Life (Aged 65+)	1.31 (0.07)	1.32 (0.07)	1.58 (0.08)	1.27 (0.08)

Note. 1 = Low degree of body display, 2 = Moderate degree of body display, 3 = High degree of body display

Post-hoc Bonferroni tests revealed linear age trends regarding display of the body after early midlife. There were no mean body display differences between the young adult and early midlife groups. However, the late midlife group had significantly lower body display scores than both the young adult and early midlife groups ($p < .001$ for both comparisons). Further, the late life group was significantly lower than all other groups ($p < .001$ for each comparison).

We also observed a significant interaction between age and gender/orientation on the degree of body display (see Figure 7). As reported above, the degree of body display remained stable across the young adult and early midlife groups. Further, the lower mean body display scores arose between early midlife and the later age groups for lesbian and heterosexual women, as well as heterosexual men. Gay men, however, remained

relatively stable in their body display scores across the first three age groups and appear to decline only from late midlife to late life.

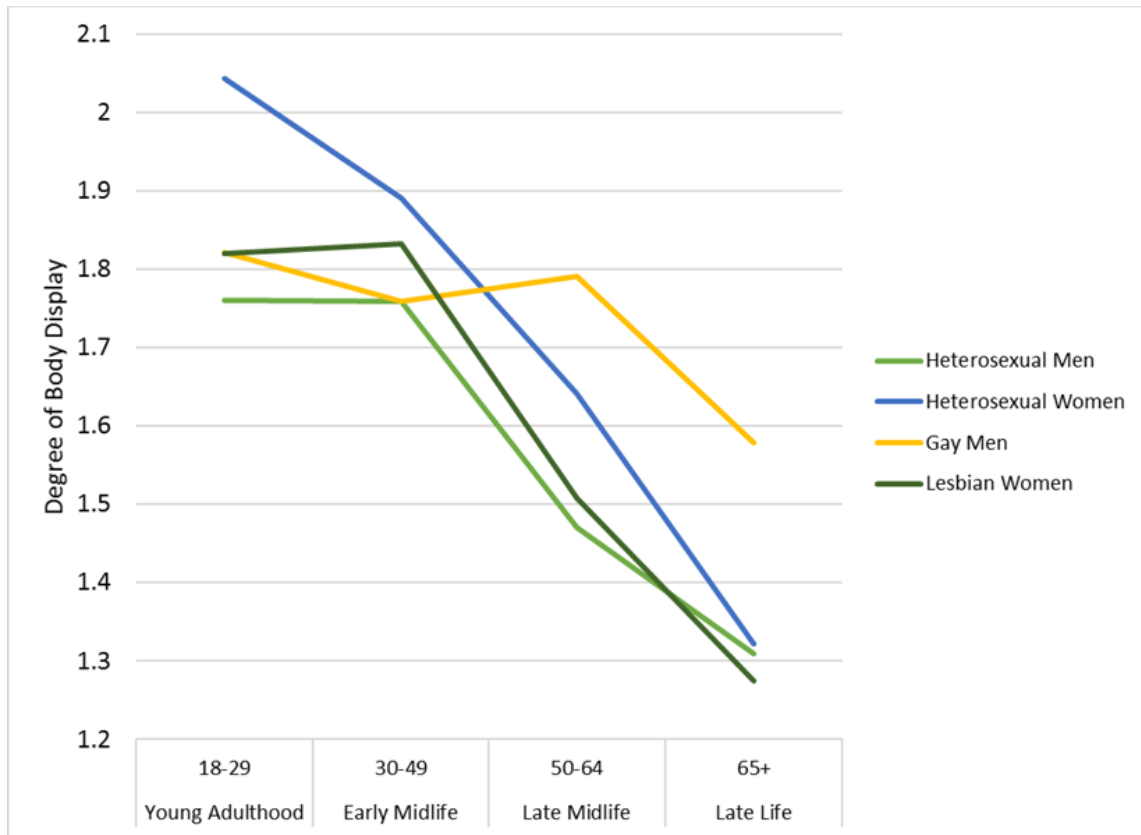


Figure 7. Estimated marginal means of body display by age and gender/orientation groups

Study 2 Discussion

Online dating is a widespread practice among single adults in the US and in recent years older adults and LGBT adults have become increasingly likely to turn to the internet to find romantic partners (Peplau & Fingerhut, 2007; Rosenfeld & Thomas, 2012; Stephure et al., 2009). Displaying one's body, physical and intimacy, and sexuality are key features of romantic relationships that individuals seek when forming new relationships (Regan, 2003; Sprecher & Cate, 2004). Results are consistent with research suggesting that individuals strategically craft their online dating profiles to appeal to potential partners (Heino et al., 2010).

Overall, results suggest that individuals rely on their photo self-presentations to convey information about their physical characteristics; over half of participants provided a photograph that included their body. By contrast, the body category for written text had a low base rate, representing less than 5% of profile content across the sample. This is consistent with other work suggesting that profile photos may be a more prominent way for individuals to provide information about their physical appearance (Fullick, 2013). Displaying photos may constitute a norm in dating profiles today, but it is a departure from older research on newspaper personals where self-presentations were limited to text and individuals had to provide written descriptions of physical characteristics (e.g. Deaux & Hanna, 1984; Hatala & Prehodka, 1996). The current study lends support to the idea that technological advances have changed the ways in which individuals advertise themselves when seeking a partner (Toma & Hancock, 2010).

In photo self-presentations, lesbian women were least likely to post a body photo, even controlling for the total number of profile photos. Only 52% of lesbians posted a body photo, compared to 60% of the total sample. This is not surprising given the

literature that lesbian women are generally not preoccupied with their bodies (Garnets & Peplau, 2006), and hold beauty standards that are less focused on femininity and thinness than those held in heterosexual culture (Krakauer & Rose, 2002).

Among profile writers who did post body photos, heterosexual women and gay men had the highest degree of body display, followed by lesbian women and heterosexual men. Again, this finding is consistent with predictions, suggesting that individuals who seek partnership with men are the most likely to emphasize physical characteristics (Deaux & Hanna, 1984, Gonzales & Meyers, 1993; Jagger, 2001; Smith, Konik, & Tuve, 2011). Additionally, although there were no mean differences in body display across the first two age groups, we did observe a decrease in body display from early midlife to late midlife and from late midlife to late life. This finding suggests that age-related body concerns may deter profile writers from showing off their bodies after late midlife.

However, we did observe a significant interaction between age and gender/sexual orientation. The body display of gay men declined only in the late life group, whereas the other groups decline in body display by midlife. Due to the emphasis on physicality, muscularity and sexuality in gay male culture (Miller, 2015; Murray & Adam, 2001; Swami & Tovée, 2008; Wierzalis et al., 2006), gay men may feel pressure to display their bodies later in life than heterosexual adults or lesbians in order to attract a partner. Additionally, though we did not measure the age of desired partners, some research suggests that male same-sex couples have greater age differences among partners compared to other couple types (Schwartz & Graf, 2009). This greater body display later into life may reflect gay men attempting to appeal to the desires of younger partners.

Additionally, we found differences in the written content of online profiles in use of sexual words among men and women of different sexual orientations. Gay men, lesbians, and heterosexual women used more sexual words compared to heterosexual

men. This finding is consistent with predictions and the literature suggesting that individuals who seek to partner with men (gay men and heterosexual women) are likely to advertise themselves using sexual terms. Further, although lesbians may be less likely than other groups to focus on the body, this finding suggests that lesbians (like gay men) are likely to discuss sexuality in their profiles. It may be the case that gay and lesbian adults simply use more sexual words as self-descriptors in their profiles, as sexuality may be more central to the identity of gay and lesbian adults (Eliason, 1996). In sum, it appears adults of all ages are likely to discuss sexuality in their profiles, but gay men, lesbians, and heterosexual women are more likely to mention sexuality when seeking a partner compared to heterosexual men.

LIMITATIONS AND FUTURE DIRECTIONS

In the current study, findings point to different goals and motivations for relationships among adults of different ages and sexual orientations. However, we did not collect profiles of older or LGBT adults from websites specifically targeting those populations and therefore findings may not generalize to all older or LGBT online daters. Some research suggests that LGBT dating websites may differ from more mainstream outlets (Phua, 2002), and this may be the case among dating websites that target older adults as well. Yet, if the norms on the websites in the current study are more in line with those of heterosexual or younger daters, then the findings may offer a conservative view of age and sexual orientation differences, which may have been even larger if we compared young and heterosexual profiles to those of older and gay adults on a niche website. Moreover, findings are generally consistent with a social exchange perspective and previous research on self-presentational differences.

An additional limitation of the current study is that we were not able to examine the role of explicit dating intentions, or the desired relationship type of profile writers. It may be the case that individuals who are interested in casual relationships would be the most likely to focus on sexuality or display their body in their profiles (Li & Kenrick, 2006). Given that there may be age, gender, and sexual orientation differences in desired relationships types, this should be examined in future work as an important factor that may influence how individuals choose to present their bodies and sexuality in their online dating profiles.

There are several avenues for future research in this area. A next step could be to examine how different profile content is associated with evaluations by potential partners and how these evaluations differ among adults of different ages, genders, and sexual orientations. Some work has already shown that certain features of online profiles are associated with negative evaluations. One study found that women who use sexualized profile photos on social media are evaluated by heterosexual men as less attractive, less socially appealing, and less competent (Daniels, 2016). However, it is not clear if these evaluations would be observed in an online dating context. Future research should examine the explicit motivations that precede the posting of body photos to dating profiles as well as the evaluations of those photos by potential partners.

Further, future research can begin to untangle how self-presentations are related to relationship outcomes. Online dating websites often caution that profiles without photographs are less likely to be contacted (Humphreys, 2004), but perhaps future work can uncover what features of profiles and photographs increase the likelihood of messages, dates, or potential relationships. Overall the current study suggests that men and women of different ages and sexual orientations use dating photographs and profile descriptions to highlight their bodies and sexuality in different ways.

In Study 3, we sought to explore dating profile content specifically among older adults. The dating motivations and self-presentations of older adults are less well understood compared to younger adults, and this is especially the case among gay and lesbian populations. Therefore, we wanted to examine written profile content without the use of predefined categories of language as in Studies 1 and 2, but instead to examine the most common themes that arose across the sample of older adults. Further, we explored the role of geographic environment on profile content, as regional differences in support for LGBT populations may shape dating preferences and self-presentations among these older adults.

STUDY 3

Study 3 Abstract

Online dating is a common way for older gay and lesbian adults to find a romantic partner, yet little is known about their dating motivations and self-presentations. Gay and lesbian older adults may have different approaches to dating than their heterosexual counterparts. Additionally, geographic location may shape online self-presentations and dating preferences due to regional differences in support for LGBT populations. This study used the Meaning Extraction Method (MEM; Chung & Pennebaker, 2008), to examine 3,343 dating profiles of gay, lesbian, and heterosexual adults aged 60 and over residing in geographic environments with low vs. high structural support for LGBT individuals. Results revealed that adults emphasized their desire for a relationship in their profiles as well as hobbies and interests, shared experiences, romance, and humor. Gay and lesbian older adults emphasized romance more so than heterosexual older adults. With regard to geographic location, gay and lesbian adults residing in environments with low structural support for LGBT people were most likely to emphasize a desire for shared experiences. Findings suggest that despite the scripted nature of dating profiles and similarity in thematic content, gay and lesbian older adults in different areas may have distinct motivations when seeking a romantic partner.

Keywords: online dating, older adults, romantic relationships, aging

Study 3 Introduction

Online dating is an increasingly common way for older adults to find a romantic partner. However, little is known about gay and lesbian older adults' dating motivations and self-presentations in online contexts. Some recent studies have examined these topics in heterosexual older adult populations (Alterovitz, & Mendelsohn, 2009; 2013; Davis & Fingerman, 2016; Menkin et al., 2015). These studies report that heterosexual older adults are motivated to date for the ubiquitous desires of love, companionship, and romance. Unlike their younger counterparts, however, older adults are uniquely focused on health issues and bringing a partner into their broader social network of family and close friends (Alterovitz & Mendelsohn, 2013; Davis & Fingerman, 2016).

Despite the nascent research examining dating in late life there is limited information on the dating motivations and online profiles of older gay and lesbian adults. While gay and lesbian older adults are more likely to be single and socially isolated than their heterosexual counterparts (Espinoza, 2014), we know that many of these adults place high value on being part of a couple (Heaphy, 2009). However, we know little about how unpartnered gay and lesbian adults approach dating in late life, their motivations, or how they may present themselves to potential partners online. Informed by prior research comparing online dating profile content among younger gay, lesbian, and heterosexual adults (e.g. Groom & Pennebaker, 2005; Morgan et al., 2010), we asked in what ways gay and lesbian older adults share or have distinct dating motivations and self-presentations compared to their heterosexual counterparts.

Additionally, we considered contextual influences on the content of online dating profiles. Research suggests that romantic partner preferences and relationship beliefs are influenced by the geographic regions individuals live in, both in terms of the social

climate in the local environments as well as the supportiveness of laws and institutions (Lau, 2012; Potârca et al., 2015). Further, burgeoning research on structural stigma (the extent to which social conditions, cultural norms, and institutional policies constrain the opportunities, resources, and well-being of stigmatized individuals; Hatzenbuehler & Link, 2014, p. 2) suggests that local environments exert influence not only on attitudes and beliefs, but on mental and physical health outcomes in young adult LGBT populations (Hatzenbuehler, 2014). Older LGBT adults have a much longer history in which they experienced stigma and discrimination due to their sexual orientation. As such, they may be particularly sensitive to stigma or support for LGBT rights in the broader environment. By examining dating profiles from 10 US cities with varying levels of structural and institutional support for LGBT people, we sought to discover how the profile content of gay and lesbian older adults may be related to the supportiveness of their environment.

Due to the lack of research in these areas, we took an exploratory approach to examining online dating profile content. We employed the Meaning Extraction Method (MEM, Chung & Pennebaker, 2008), an analytic technique used to extract meaningful themes from large text-based datasets. Unlike traditional content coding, the MEM avoids subjective biases by automating the process of theme generation and discovering words that naturally co-occur to form themes. Further, unlike other content coding methodologies the MEM does not rely on a priori themes or categories; instead themes are discovered using the most common content words across the sample.

POTENTIAL SIMILARITIES AND DIFFERENCES IN DATING MOTIVATIONS AND SELF-PRESENTATIONS

Older adults' dating profiles may include a wide range of themes, and the prevalence of those themes may differ as a function of older adults' sexual orientation

and gender. Researchers have identified common themes in prior work on dating profiles in late life, but these studies often include only heterosexual older adults or rely on a priori content categories or qualitative methodologies (Alterovitz & Mendelsohn, 2013; Coupland, 2000; Davis & Fingerman, 2016; Morgan et al., 2010; McWilliams & Barrett, 2012). Nevertheless, common themes identified in these studies include: a desire for love, romance, companionship/shared experiences, sexuality/attractiveness, and adventure, as well as the importance of family, humor, and honesty.

The scant research examining dating among gay and lesbian adults in late life suggests that these adults share similar motivations common to all older adults when seeking a partner. Like their heterosexual counterparts, gay and lesbian adults report a desire for love, companionship, and affection (Suen, 2015; Peplau & Fingerhut, 2007). Additionally, themes of humor and honesty are found in the dating profiles of older heterosexual adults (Coupland, 2000; Morgan et al., 2010) as well as profiles of gay and lesbian adults (Jönson & Siverskog, 2012). Further, research suggests that gay and lesbian adults follow many of the same dating scripts as do heterosexuals, and online daters generally understand scripts for what they should write in their profiles (Ellison et al., 2006; Klinkenberg & Rose, 1994). For these reasons, we expected to find many common motivations in profile content among gay, lesbian, and heterosexual older adults including a desire for a loving relationship, companionship, romance, humor and honesty.

However, research also suggests gay men and lesbians may have different dating motivations and preferences than heterosexual men and women in certain regards, and those differences may be reflected in profile content. Some early research on dating profiles (magazine and newspaper ads) among younger gay, lesbian, and heterosexual adults suggests that individuals seeking same-sex partners are more focused on sex and sexuality than heterosexual adults when seeking a partner (Child et al., 1996; Deaux &

Hanna, 1984, Gonzales & Meyers, 1993, Hatala & Prehodka, 1996). Additionally, a more recent study of online dating profiles found that individuals seeking same-sex partners used more sexuality and body-related words (Groom & Pennebaker, 2005).

It is unclear whether sexuality will emerge as a key theme in online dating profiles in later life. Some studies using qualitative or a priori content categories have highlighted sexuality as a key theme in older adults' dating profiles (Alterovitz & Mendelsohn, 2013; Davis & Fingerman, 2016). Conversely, other studies note that older adults tend to focus more on non-sexual relational goals (Coupland, 2000) or focus less on physicality and sexuality than younger adults (Morgan et al., 2010). It may be the case that sexuality is emphasized equally across sexual orientation, or more in the profiles of older gay and lesbian adults compared to their heterosexual counterparts. The current research addressed this question.

Another area highlighted in previous studies of dating in late life, the importance of family relationships, may have differing importance to LGBT older adults. The broader literature on aging suggests that family relationships are of key importance in later life (Blieszner, 2006) as family relationships serve as key providers of social support for older adults. Further, when seeking a new relationship, older adults are likely to mention family in their profiles (Davis & Fingerman, 2016; Morgan et al., 2010). Yet, for gay and lesbian older adults, relationships with family may not be as central. Research shows that gay and lesbian adults perceive less support from their families of origin than heterosexuals perceive (Elizur & Mintzer, 2003; Kurdek, 2004, 2006). Conversely, several scholars note the importance of "chosen" families to gay and lesbian adults (Heaphy, 2009; Peplau & Fingerhut, 2007; Weston, 1991), suggesting that close friendships may be more central to the lives of gay and lesbian older adults. Based on this research, gay and lesbian older adults may be more likely than heterosexual older adults

to discuss close friendships in their dating profiles, whereas heterosexual older adults may be more likely to discuss family relationships.

Overall, the current study may highlight themes that are similar to those found in prior studies of online dating in late life, including companionship, romance, humor, and honesty. Other common profile themes identified in prior work, such as sexuality and family relationships, may be emphasized differently depending on sexual orientation. It is also possible that the current study may capture themes that are not well represented in the literature.

CONTEXTUAL INFLUENCES AND REGIONAL DIFFERENCES IN SUPPORT FOR LGBT PEOPLE

Online self-presentations and dating motivations may also be influenced by contextual factors, such as the geographic region and local environment where individuals reside. While the past decades have seen an increase in public discourse and attention to LGBT issues (Peplau & Fingerhut, 2007; Rosenfeld & Kim, 2005), disparities in structural support and legal rights for LGBT people persist across regions of the US (Oakley, 2015). This variability in the experience of contextual support for LGBT people may be associated with how older adults present themselves to potential romantic partners.

Regional differences also serve as markers of the historical and social context in which older adults have lived and aged. Unlike heterosexual older adults or younger cohorts, today's older gay and lesbian adults came of age in an era where their sexuality was stigmatized, medicalized, and criminalized throughout the US. These older adults have lived through dramatic social and historical changes, including the beginning of the gay rights movement in the 60's, the HIV/AIDS epidemic, and the increasing visibility of LGBT rights in the current social and political sphere. Older gay and lesbian adults living

in different parts of the country may have had different lifetime experience with stigma, prejudice, and discrimination as a result of their sexual orientation (Hatzenbuehler, 2014), perhaps leading to differences in dating motivations and self-presentations when compared to heterosexual older adults.

Additionally, a burgeoning literature suggests that varying levels of discrimination and stigma experienced by LGBT individuals in different regions of the country are associated with a host of mental and physical outcomes (see Hatzenbuehler, 2014 for a review). Yet, we know less about potential interpersonal significance of contextual influences and structural support. For example, we know little about how regional differences may shape the dating environment for LGBT adults. Gay and lesbian adults living in areas with low levels of structural support may experience frustration or hesitation about pursuing a dating relationship and these feelings may be reflected by the language they use in their profiles. These adults may express more negativity in their profiles, or they may focus more on their independence or autonomy.

To our knowledge, only one other study has examined the association between geographic region and the content of online dating profiles and did so among adults of all ages in eight European countries (Potârcă et al., 2015). The researchers found that living in a supportive environment for LGBT adults (based on legal recognition of same-sex marriage and regional attitudes toward same-sex couples) was associated with increased long-term dating intentions, increased value attached to sexual exclusivity for both gay men and lesbians, and stronger monogamy beliefs.

THE CURRENT STUDY

The current study examined older adults' online dating profiles in a comparison of gay, lesbian, and heterosexual older adults. We considered potential profile themes based

on limited research regarding online dating in late life as well as some prior work on dating profiles of younger LGBT adults. We expected common themes to emerge in profile content as well as potential differences in profile themes as a function of sexual orientation. Further, emerging research suggests that regional differences in support for LGBT adults may be related to their dating motivations and self-presentations (Potârca et al., 2015). By exploring profile themes from individuals in geographic regions with different levels of structural support for LGBT people, we examined how environmental discrepancies may be reflected in online dating profile content.

We relied on the Meaning Extraction Method (MEM; Chung & Pennebaker, 2008) to identify themes within the profiles. The MEM is a method of text analysis that identifies psychologically meaningful information from text-based data by discovering words that co-occur across a large corpus of text. The co-occurrence of words across a body of text can then be used to identify psychologically meaningful themes. For example, in an MEM analysis of emails written by patients following inpatient psychotherapy, researchers identified different thematic content as a function of inpatient therapeutic outcomes (Wolf, Chung, & Kordy, 2010).

Unlike other forms of text analysis, such as the Linguistic Inquiry and Word Count software (LIWC; Pennebaker et al., 2007), the MEM does not rely upon a priori content categories; instead it assumes that words with similar thematic meaning are likely to naturally group across a large sample of text. A key strength of the MEM is its ability to utilize a quantitative method with large samples of text. By using the MEM, the current study sought to answer the following research questions:

- (1) What themes are present among dating profiles of older adults (aged 60 and older) of differing sexual orientations across US cities?

- (2) Will the percentages of words fitting each theme differ between older gay and lesbian profile writers and older heterosexual profile writers?
- (3) Will the percentages of words fitting each theme differ between older gay and lesbian profile writers living in cities that are less supportive of LGBT rights compared to older profile writers living in cities that are more supportive?

Study 3 Method

SOURCE OF ONLINE DATING PROFILES

The sample of dating profiles was drawn from two popular online dating websites. We identified these websites through internet search engines (Google, Bing, Yahoo, and Ask.com) using the search term “online dating.” Additionally, we used reports from Experian Hitwise (a consumer behavior firm) and Google Zeitgeist (which provides reports of most frequent search terms in a given year) to identify the most popular websites. We excluded websites from consideration if they catered to a “niche” audience (e.g. particular religious denominations, individuals interested in extramarital affairs). The sample also was limited to websites in the United States and websites that allow users to search for potential partners rather than those websites that limit potential partners to those assigned by a computer algorithm (e.g. eHarmony.com, Chemistry.com). After exclusions, the two most popular websites were chosen to extract individual user profiles (eBizMBA, 2016).

Neither of the websites charged a fee to create a profile. Users are required to respond to fixed category questions as well as provide a short free-response description of themselves and what they seek in a potential mate. The instructions for the free response section differed slightly between the two websites. The first website instructed users to write a short description of who they are and what they are looking for, whereas

the second website informed users that the free response description would constitute a “first impression” for potential partners.

In the current study, the number of words in the free response section for the two websites ranged from 30 to 1359 ($M = 117.83$, $SD = 116.12$). Based on prior research (e.g., Davis & Fingerman, 2016), we did not collect profiles containing fewer than 30 words. In the aforementioned study, 5% of potential profiles were excluded based on this criterion.

ONLINE DATING PROFILES AND GEOGRAPHIC LOCATION

The study included up to 3,343 profiles from the two dating websites using random quota sampling without replacement. Profiles were identified via search filters for geographic location, age, gender of profile writer, and gender of potential partner. Within each of the two websites, we collected up to 1000 profiles from individuals aged 60 or older seeking same-sex relationships and up to 1000 profiles from individuals aged 60 or older seeking heterosexual relationships. We did not reach our target of 4,000 profiles due to low numbers of profiles for older gay and lesbian adults across geographic regions.

It is important to note that individuals’ preferences for a same-sex partner via their online profile does not allow for a clear designation of sexual identity, but rather, provides an expression of same-sex desire. Profile writers on both websites were constrained in that they could only choose one gender designation for themselves and for potential partners. Therefore, although we collected profiles based on preferences for same or opposite sex partners, we realize that bisexual and transgender individuals may be present in the sample (though they should be equally represented across the sample due to the random sampling technique).

In order to understand how geographic location may be related to online self-presentations, we gathered profiles from 10 U.S. cities: five cities that may be considered among the *most* LGBT-friendly large cities in the U.S and five U.S. cities that may be considered among the *least* LGBT-friendly large cities in the US. For each profile, we also collected data on education and ethnicity to use as control variables (see Table 10 for sample characteristics).

Table 10

Study 3 Sample Descriptive Statistics

Variables	Gay and Lesbian Adults (<i>N</i> = 1389)		Heterosexual Adults (<i>N</i> = 1954)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	64.90	5.20	65.38	5.08
Profile word count	98.50	88.33	131.57	130.67
	Proportion		Proportion	
Female	.48		.50	
Website 1	.49		.51	
Low LGBT Support Environment	.44		.49	
Racial/ethnic minority ^a	.20		.14	
Education				
High school	.18		.23	
Some college	.27		.29	
Associate's Degree	.09		.10	
Bachelor's Degree	.23		.21	
Graduate Degree	.23		.16	

^a0 = *Racial/ethnic minority* and 1 = *Non-Hispanic White*.

To identify cities differing in structural supportiveness, we consulted the Human Rights Campaign's Municipal Equality Index Report (MEI; Oakley, 2015), which is a nationwide evaluation of municipal laws and policies affecting the LGBT community.

The 2015 report included ratings of 408 U.S. cities (including all state capitals, the 200 largest cities in the US, the five largest cities or municipalities in each state, the cities home to each state's two largest public universities, and 75 cities and municipalities that have high proportions of same-sex couples). Each city was rated on a scale of 0 to 100, based on the city's laws, policies, benefits and services affecting the LGBT community, a lower score indicates less structural support and greater structural stigma and discrimination against LGBT populations (more information on the MEI and scoring can be found on the Human Rights Campaign website: <http://www.hrc.org/campaigns/municipal-equality-index>).

For the purposes of this study, we selected large U.S. cities with urban, suburban and rural outlying areas and attempted to find high and low MEI cities with similar populations across the Midwest, Southeast, East coast, and Southwest. The 5 large cities with low MEI scores rated out of 100 (indicating less structural support for LGBT adults) were: Jacksonville, FL (MEI score= 26); Oklahoma City, OK (MEI score = 29); Virginia Beach, VA (MEI = 31); Houston, TX (MEI = 48); and Memphis, TN (MEI = 56). We matched these cities to 5 large cities with high MEI scores out of 100 (indicating greater structural support for LGBT adults): Pittsburgh, PA (MEI = 95); Kansas City, MO (MEI score of 100 out of 100); Orlando, FL (MEI score of 100 out of 100); Dallas, TX (MEI score of 100 out of 100); and Louisville, KY (MEI score of 100 out of 100). The low MEI cities generally had lower populations than the high MEI cities, but differences in population are taken into account by the MEI scoring system (Oakley, 2015). We did not include cities on the West Coast because we could not find a sufficiently large metropolitan area with a low MEI score on the West Coast.

It is noteworthy that lower MEI cities appear to have similar LGBT population percentages when compared to the higher MEI cities. The lower MEI cities of Houston,

Virginia Beach, Jacksonville, Memphis, and Oklahoma City have estimated LGBT population percentages of 3.1 to 4.4%. The higher MEI scoring cities of Pittsburgh, Kansas City, Orlando, Dallas, and Louisville also have LGBT population percentages of 3.0% to 4.5%, (Gates, 2006).

The final sample included 1,774 profiles from 5 high MEI scoring large cities in the U.S. and 1,569 profiles from 5 low MEI scoring large cities in the U.S. To search for profiles, we randomly selected zip codes from each of the 10 metropolitan statistical areas. Within each randomly chosen zip code, we extracted up to 20 profiles from the following groups: gay men aged 60 and over, lesbian women aged 60 and over, heterosexual men aged 60 and over, and heterosexual women aged 60 and over (see Appendix B for a visual representation of the sampling method).

ANALYTIC STRATEGY: LANGUAGE ANALYSIS

To examine the content of the 3,343 online dating profiles, we used Meaning Extraction Helper (MEH; Boyd, 2014), a free software program designed to automate the procedure of the Meaning Extraction Method. Traditionally, thematic and qualitative analyses of text data require judges or raters to identify meaningful features across a collection of individual text samples. This process can introduce subjective biases and also is very difficult to perform on large datasets. The Meaning Extraction Method avoids such problems and is ideal for exploratory analyses.

The MEM identifies all content words and determines the degree to which the high-frequency content words naturally co-vary. For example, individuals who use the word “music” in their profiles may be likely to use words such as “play, listen, concert, band, instrument, song.” In essence, the software mathematically discovers themes or

units of meaning. Thus, the MEM-derived themes capture the various topics that people generate when asked to describe themselves in an online dating profile.

The MEM performs three main analytic steps (For a detailed description of the MEM procedure used in the current study, see Appendix C). First, the entire sample of text data is analyzed to identify word prevalence, both within and across profiles (see Table 11 for the top 50 most comment content words from across the sample). Like most text-analytic methods, MEM omits function words (e.g., the, this, that, on) and low-frequency content words to ensure reliability and validity. The words that remained after the elimination of function words and low prevalence words were considered ‘common content words’ if they appeared in more than 5% of all observations (5-10% is the recommended prevalence rate for the MEM; Chung & Pennebaker, 2008). Additionally, as a part of this first step, the software performs a process called lemmatization, where words are converted to their base inflection or “lemma” (e.g., “walking,” “walks”, and “walked” are converted to “walk”). Although this process is not perfect, the vast majority of the words in the sample were successfully converted to their most basic form.

In the second step, each observation (online profile) received a binary score (1 = *present*, 0 = *absent*) for each of the ‘common content words.’ This process occurs for all words that appear in a set minimum number of profiles (5% in this sample). Lastly, in a third step, the binary scores for each of the ‘common content words’ across the sample were submitted to a Principal Components Analysis (PCA), which analyzed the extent to which these ‘common content words’ clustered together to reveal themes.

Table 11

Top 50 Most Frequently Used Words in Profiles of Older Gay, Lesbian, and Heterosexual Adults

	Word	Frequency (n)	% in texts		Word	Frequency (n)	% in texts
1	love	4625	59.55	26	play	627	14.98
2	enjoy	3023	48.82	27	care	617	14.98
3	life	2497	42.93	28	see	603	15.04
4	look	2439	49.03	29	laugh	593	15.13
5	time	1921	36.86	30	sense	591	15.72
6	friend	1561	33.63	31	humor	587	16.23
7	music	1246	29.90	32	walk	575	15.55
8	person	1094	24.54	33	day	571	12.86
9	live	1058	22.36	34	guy	568	12.05
10	work	1049	22.4	35	watch	557	14.56
11	fun	1040	24.93	36	dance	530	12.86
12	man	1040	19.97	37	country	527	13.36
13	year	1001	20.18	38	read	524	13.78
14	people	977	20.99	39	special	518	12.02
15	movie	977	25.92	40	spend	500	13.03
16	interest	913	20.12	41	important	493	12.23
17	woman	863	17.61	42	nice	468	11.33
18	find	838	19.22	43	long	461	11.84
19	share	807	18.21	44	lady	445	9.60
20	honest	796	20.21	45	easy	445	11.81
21	travel	773	19.85	46	talk	440	10.94
22	great	764	17.34	47	open	428	10.91
23	family	761	18.71	48	beach	427	11.42
24	meet	726	18.27	49	hope	418	10.34
25	relationship	721	16.71	50	retire	416	11.51

Following the extraction of themes, the presence of each theme within individual profiles can be quantified using a standard word count approach (using software such as the Linguistic Inquiry and Word Count software (LIWC; Pennebaker et al., 2007). This approach is commonly used in studies employing an MEM methodology (e.g. Stanton, Boyd, Pulverman & Meston, 2015). The word counting software calculates the percentage of words in each profile by counting the total theme-relevant words within each profile and dividing that number by the total word count of the profile. Then, using a multiple regression framework, we can predict the percentage of words in each theme by sexual orientation, gender, and geographic location.

Based on the structure of the data, we did consider the use of multi-level models in the current study, with profiles nested in geographic locations. However an examination of intraclass correlations (ICCs) of each theme revealed no evidence to indicate that there was variation in theme percentages across regions; instead all variation in themes was occurring across profile writers (Peugh, 2010). Therefore, we determined it was not necessary to use multi-level models in the analyses. Additionally, we ruled out the use of multinomial regressions based on the fact that the outcome variables of theme percentages were continuous, not nominal.

Study 3 Results

To determine the number of themes via the Meaning Extraction Method (MEM), a Principal Components Analysis with varimax rotation revealed a 5-factor solution. The diagnostic Bartlett's Sphericity Test ($\chi^2=41169.30$, $p < .001$) and the Kaiser-Meyer-Olkin metric (KMO=.80) indicate that a factor-type model was a good fit to the data. Factors selected for inclusion had Eigenvalues above 1.75 and provided a significant increase to the cumulative percent variance accounted for by the model. Words were retained within

each theme if factor loadings were .15 or higher for that theme. We also examined the scree plot to confirm the number of factors/themes. In total the factors (themes) accounted for 13.5% of the total variance. These metrics are comparable to other language based studies using the MEM (Chung & Pennebaker, 2008; Stanton et al., 2015, Wilson, Mihalcea, Boyd, & Pennebaker, 2016).

THEMES IN DATING PROFILES

The first research question asked: What themes are present among dating profiles of older adults (aged 60 and older) across 10 US cities? The MEM procedure identified 5 themes using the criteria above. The first theme was labeled “Desire for a relationship” and contained words such as “looking, relationship, right, partner, ready, open, meet, and friendship.” The second theme was labeled “Shared experiences” and included words such as “enjoy, adventure, active, conversation, dine, experience, trip, and explore.” The third theme was labeled “Hobbies/Interests” and included words such as “music, fish, camp, garden, dance, game, cook, and outdoors.” The fourth theme was labeled “Romance” and contained words such as “hold, hand, movie, dinner, romantic, together, quiet, night.” The fifth theme contained only 5 words: “humor, sense, great, laugh, and honest” and was labeled “Humor” (for a full list of words in each theme, see Table 12).

Next, we calculated the percentage of words in each individual profile that corresponded to each of the themes. To do this, we used a word counting software (LIWC; Pennebaker et al., 2007) that counts each word of each individual profile and calculates the percentage of words in the profile that belong to each theme. By doing this, we were able to identify which of the themes was most and least prevalent among the sample.

Table 12

MEM Generated Themes from Online Dating Profiles

Theme 1: Desire for a relationship		Theme 2: Shared experiences		Theme 3: Hobbies/Interests		Theme 4: Romance		Theme 5: Humor	
life	.426	enjoy	.453	music	.585	hold	.510	humor	.828
relationship	.404	active	.323	country	.527	hand	.494	sense	.826
right	.388	travel	.315	rock	.493	movie	.457	great	.320
give	.385	dine	.314	fish	.360	watch	.453	laugh	.291
man	.374	traveling	.312	listen	.353	walk	.420	honest	.246
find	.373	explore	.309	camp	.351	beach	.342		
year	.362	interest	.299	read	.304	dinner	.332		
share	.343	friend	.297	work	.268	romantic	.302		
woman	.339	wine	.292	love	.267	tv	.291		
heart	.335	family	.284	play	.263	together	.274		
see	.332	cooking	.251	goal	.260	nice	.206		
best	.324	sport	.249	favorite	.238	quiet	.204		
look	.317	adventure	.244	animal	.213	eat	.202		
hope	.311	place	.230	garden	.205	ride	.199		
age	.299	concert	.228	type	.202	night	.162		
important	.296	spend	.224	hard	.196				
time	.295	experience	.221	dance	.194				
live	.293	meeting	.208	game	.176				
learn	.290	stay	.204	outdoors	.173				
mind	.288	trip	.203	cook	.162				
better	.288	conversation	.195						
day	.288	retire	.185						
long	.287	fun	.177						
happy	.283	book	.169						
partner	.282								
special	.279								
care	.277								
real	.275								
move	.274								
open	.266								
ready	.255								
big	.253								
start	.250								
young	.247								
respect	.247								
lady	.231								
god	.231								
people	.228								
meet	.219								
person	.217								
guy	.198								
full	.189								
pretty	.184								
short	.179								
show	.176								
child	.170								
friendship	.163								
simple	.156								
talk	.151								

Note. These data reflect the proportion of profiles in the sample that included each word

On average, the most prevalent theme represented over 5% of profile content, whereas the least prevalent theme made up an average of just under 1% of profile content. As can be seen in Table 12, the most prevalent theme was “Desire for a relationship” ($M = 5.82$, $SD = 3.31$) followed by “Hobbies/Interests” ($M = 2.81$, $SD = 2.93$), “Shared experiences” ($M = 2.68$, $SD = 2.47$), “Romance” ($M = 1.09$, $SD = 1.58$) and “Humor” ($M = 0.93$, $SD = 1.61$).

A similar pattern of frequencies was observed with regard to the distribution of themes within participants. Of the 3343 profiles, 95% of profiles included words from the first theme “Desire for a relationship,” 81% of profiles included words from the second theme “Shared experiences,” 77% of profiles included words from the third theme “Hobbies/Interests,” 52% of profiles included words from the fourth theme “Romance,” and 44% of profiles included words from the fifth theme “Humor.”

Here we present a few example excerpts for each theme (with minor non-theme related words changed to protect profile writers identities).

Theme 1 (Desire for a relationship): *“I’m seeking an open and honest relationship with a person who is outgoing and caring” and “I’m looking for a man who is independent, special, and real. I want a partner with an open mind and an open heart.”*

Theme 2 (Shared experiences): *“Looking for good company, conversation, and humor, someone who enjoys life and people” and “I enjoy being around friends and family... I love going out and having fun, like to meet new friends, enjoy spending time with my grandkids”*

Theme 3 (Hobbies/interests): *“I would love to meet someone who shares the same interests. I love to talk, dance, shop, travel, and any kind of music (but I like*

country the best)” and “I am retired and love to read and watch my favorite shows, like to go fishing and love to cook.”

Theme 4 (Romance): *“I am a romantic person and I like to cuddle, kiss, lay in bed together, and hold hands” and “I like going out to a romantic dinner, and watching movies together while cuddled up with a glass of wine.”*

Theme 5 (Humor): *“I have a great sense of humor and love to laugh. I’m a very outgoing person who is looking for someone with a love for adventure and who has a sense of humor” and “I love to laugh and enjoy new experiences. I’m looking for a person who is honest, kind, has a great sense of humor and goofy personality.”*

OLDER GAY AND LESBIAN PROFILE WRITERS VS. HETEROSEXUAL PROFILE WRITERS

Next we conducted analyses to answer the second research question:

Will the percentages of words fitting each theme differ between older gay and lesbian and older heterosexual profile writers?

To answer this question, we conducted five separate regression models with sexual orientation (0 = *gay/lesbian*, 1 = *heterosexual*) predicting the percentage of total profile words fitting each MEM-generated theme. We also included gender (0 = *female*, 1 = *male*) in the models as well as the interaction between gender and sexual orientation, to test whether the association between sexual orientation and thematic content was different for gay, lesbian, and heterosexual men and women. We included website, ethnicity coded “0 = *Racial/ethnic minority*” and “1 = *Non-Hispanic White*” and education as control variables. Results can be seen in Table 13.

Table 13

Regression Analysis Predicting Percentage of Words in MEM Themes by Gender and Sexual Orientation

	Theme 1: Desire for a relationship		Theme 2: Shared experiences		Theme 3: Hobbies/ Interests		Theme 4: Romance		Theme 5: Humor	
Variables	B	SE	B	SE	B	SE	B	SE	B	SE
Intercept	6.41 ***	0.20	2.73 ***	0.15	4.45 ***	0.17	1.37 ***	0.10	0.84 ***	0.10
Gender ^a	-0.35 *	0.16	-0.73 ***	0.01	-0.62 ***	0.10	0.10	0.06	-0.24 ***	0.06
Sexual Orientation ^b	-0.36 *	0.17	-0.32 *	0.09	-0.10	0.10	0.12 *	0.06	0.03	0.06
Gender X Orientation	0.73 **	0.24	0.62 ***	0.09	--	--	--	--	--	--
Controls										
Website ^c	0.62 ***	0.12	0.18	0.09	-1.52 ***	0.10	-0.01	0.06	0.48 ***	0.06
Ethnicity ^d	-0.57 ***	0.17	0.12	0.12	0.06	0.14	-0.01	0.08	-0.05	0.08
Education ^e	-0.09 *	0.04	0.05	0.03	-0.19 ***	0.04	-0.12 ***	0.02	0.00	0.02
R ²	0.02		0.02		0.11		0.01		0.03	
F	8.96 ***		7.75 ***		73.49 ***		7.13 ***		15.87 ***	

^a0 = Female and 1 = Male. ^b0 = Heterosexual and 1 = Gay or Lesbian. ^c0 = Website #1 and 1 = Website #2. ^d0 = Racial/ethnic minority and 1 = Non-Hispanic White. ^e1 = High school, 2 = Some college, 3 = Associate's Degree, 4 = Bachelor's Degree, and 5 = Graduate Degree.

* $p < .05$. ** $p < .01$. *** $p < .001$.

For Theme 1 (Desire for a relationship) there was a significant interaction between gender and sexual orientation ($B = 0.73, p = .003$) such that gay men and heterosexual women had higher percentages of profile words in Theme 1 compared to lesbian women and heterosexual men (see Figure 8). For Theme 2 (Shared experiences) there was also a significant interaction between gender and sexual orientation ($B = 0.62, p < .001$), such that females had higher percentages of words in Theme 2, but this effect was strongest for heterosexual women (see Figure 9).

For Themes 3, 4, and 5, there were no significant interaction effects, so we dropped the interaction term from the models for those themes and report only main effects of gender and sexual orientation. Results revealed a main effect of gender on percentage of words in Theme 3 (Hobbies/Interests) and Theme 5 (Humor), such that female profile writers had larger percentages of words in their profiles belonging to those themes (Theme 3: $B = -0.62, p < .001$; Theme 5: $B = -0.24, p < .001$). Additionally, there was a main effect of sexual orientation on percentage of words in Theme 4 (Romance), such that gay/lesbian profile writers used a greater percentage of words in this theme compared to heterosexual profile writers ($B = 0.12, p = .037$).

PROFILES WRITERS FROM HIGH VS. LOW LGBT SUPPORTIVE CITIES

Next, we conducted analyses to answer the third research question:

Will the percentages of words fitting each theme differ between profile writers living in cities that are less supportive of LGBT rights compared to those living in cities that are more supportive? Will differences emerge only for gay and lesbian profile writers?

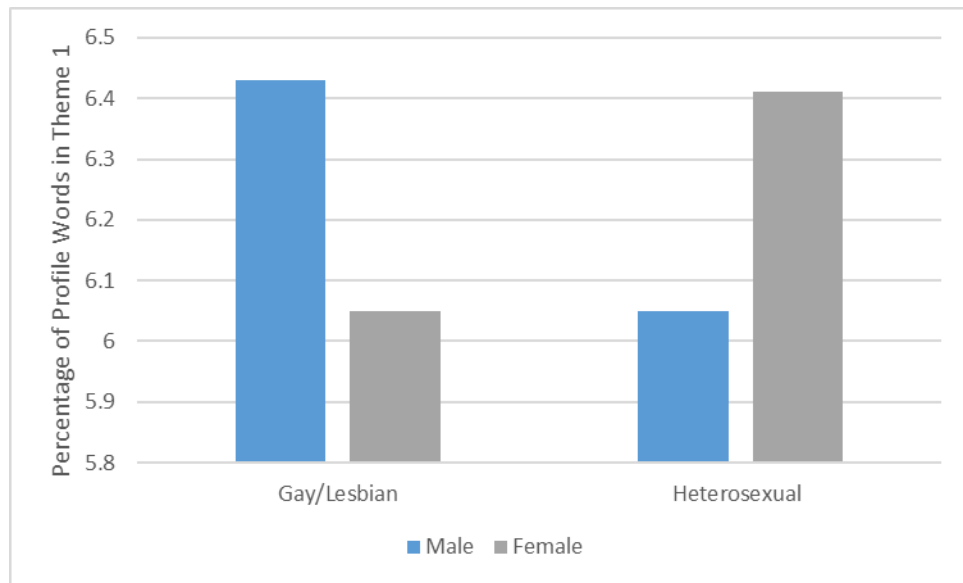


Figure 8. Interaction between gender and sexual orientation on percentage of words in Theme 1 Desire for Relationship

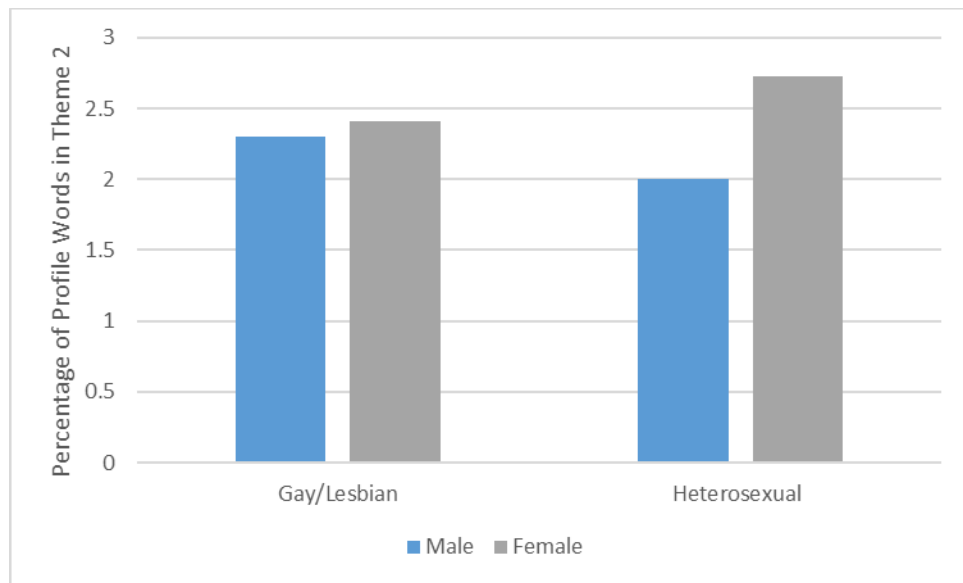


Figure 9. Interaction between gender and sexual orientation on percentage of words in Theme 2 Shared Experiences

To answer this question, we conducted five separate regression models with geographic location (0 = *Low LGBT support environment*, 1 = *High LGBT support environment*) predicting the percentage of profile words fitting each MEM-generated theme. We also included sexual orientation in the models as well as the interaction between geographic location and sexual orientation to test whether the association between geographic location and thematic content was moderated by sexual orientation. Results are presented in Table 14.

Analyses revealed a significant interaction between geographic location and sexual orientation on percentage of words in Theme 2 (Shared experiences; $B = -0.68, p < .001$). As can be seen in Figure 10, gay and lesbian profile writers in less LGBT supportive environments have the highest percentage of words describing shared experiences (i.e., Theme 2), whereas gay and lesbian profile writers in high LGBT supportive environments have the lowest percentage of words in this theme.

Additionally, we ran post-hoc analyses using sexual orientation as well as the MEI scores for the geographic locations as the predictor of the percentage of words in Theme 2 in place of the binary variable (0 = *Low LGBT support environment*, 1 = *High LGBT support environment*). There was a significant interaction between MEI-scores and sexual orientation on percentage of words in Theme 2 (Shared experiences; $B = -0.01, p < .001$). As can be seen in Figure 11, for gay and lesbian adults, as MEI scores increased (as geographic areas become more supportive) the percentage of words fitting Theme 2 decreased. This pattern was reversed for heterosexual adults; as MEI scores increased the percentage of words in Theme 2 increased.

Table 14

Regression Analysis Predicting Percentage of Words in MEM Themes by Sexual Orientation and Demographic Area

	Theme 1: Desire for a relationship		Theme 2: Shared experiences		Theme 3: Hobbies/ Interests		Theme 4: Romance		Theme 5: Humor	
Variables	B	SE	B	SE	B	SE	B	SE	B	SE
Intercept	6.20***	0.20	2.30***	0.16	4.33***	0.18	1.40***	0.10	0.80***	0.10
Sexual Orientation ^a	0.10	0.12	0.37**	0.14	-0.10	0.10	0.12*	0.06	0.03	0.06
Geographic Area ^b	0.04	0.12	0.24*	0.12	-0.11	0.10	-0.02	0.06	-0.06	0.06
Orientation X Geographic Area	--	--	-0.68***	0.18	--	--	--	--	--	--
Controls										
Website ^c	0.68***	0.12	0.18*	0.09	-1.59***	0.10	-0.00	0.06	0.45***	0.06
Ethnicity ^d	-0.57***	0.17	0.13	0.13	0.03	0.14	-0.01	0.08	-0.06	0.08
Education ^e	-0.10*	0.04	0.03	0.03	-0.22***	0.04	-0.12***	0.02	-0.01	0.02
R ²	0.01		0.01		0.10		0.01		0.02	
F	8.91***		3.49**		65.78***		7.86***		12.62***	

^a0 = Heterosexual and 1 = Gay or Lesbian. ^b0 = Low LGBT Support Environment and 1 = High LGBT Support Environment.

^c0 = Website #1 and 1 = Website #2. ^d0 = Racial/ethnic minority and 1 = Non-Hispanic White. ^e1 = High school, 2 = Some college, 3 = Associate's Degree, 4 = Bachelor's Degree, and 5 = Graduate Degree.

* $p < .05$. ** $p < .01$. *** $p < .001$

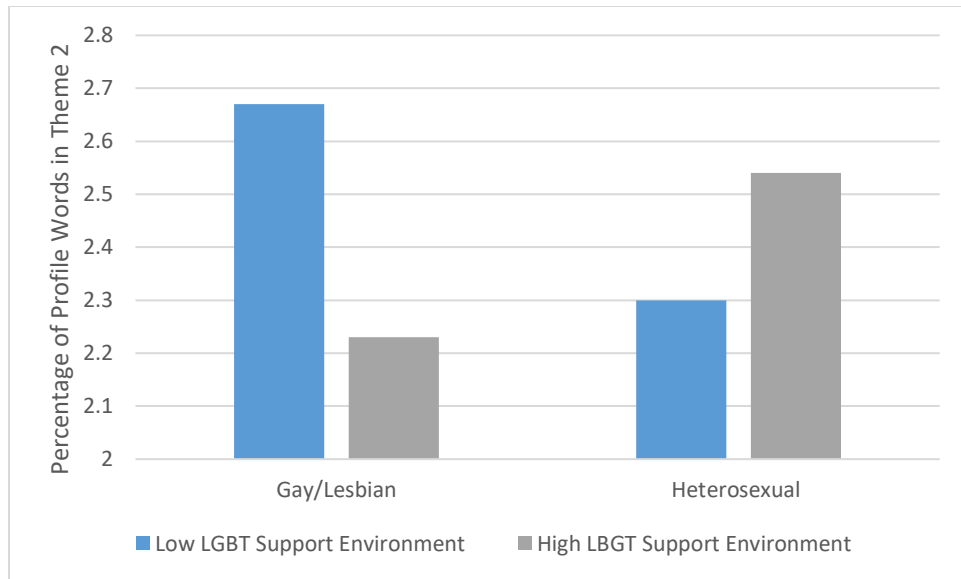


Figure 10. Interaction between demographic area and sexual orientation on percentage of words in Theme 2 Shared Experiences

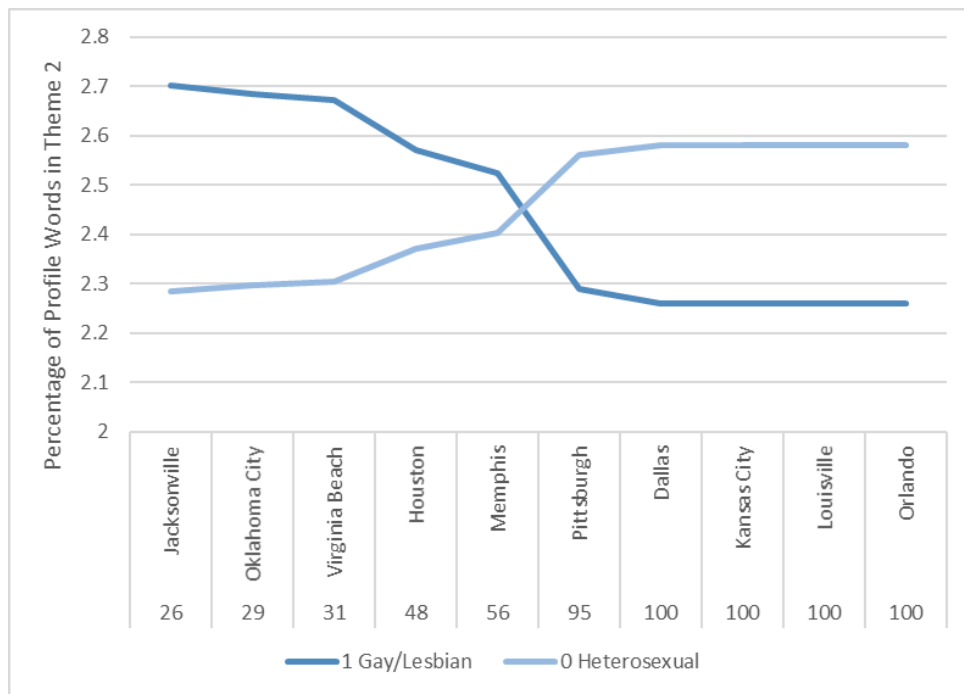


Figure 11. Interaction between MEI scores and sexual orientation on percentage of words in Theme 2 Shared Experiences

Study 3 Discussion

Online dating is now a common context for older adults to find a romantic partner. Yet, researchers know little about the dating motivations and self-presentations of gay and lesbian older adults. Some research has examined self-presentations in online dating profiles among older heterosexual adults (Alterovitz, & Mendelsohn, 2009; 2013; Coupland, 2000; Davis & Fingerman, 2016; Menkin et al., 2015) or younger gay and lesbian adults (Groom & Pennebaker, 2005; Morgan et al., 2010), but studies of online dating among older gay and lesbian adults are scarce (Potârcă et al., 2015; Jönson & Siverskog, 2012). The current study examined online dating profiles of older gay, lesbian, and heterosexual adults to identify potential similarities and differences in profile content as a function of sexual orientation.

Further, the current study examined online dating profile content from regions of the country with different levels of structural support for LGBT people. Research suggests that living in areas with less support for LGBT people can exert a deleterious influence on a variety of mental and physical health outcomes in these populations (see Hatzenbuehler, 2014). Additionally, a recent study found links between the supportiveness of one's environment and relationship intentions and beliefs in LGBT online daters in European countries (Potârcă et al., 2015). Informed by these ideas, we asked whether differing levels of structural support may be related to the ways in which older gay and lesbian adults present themselves to potential romantic partners.

Using the Meaning Extraction Method (MEM; Chung & Pennebaker, 2008) an analytic technique that discovers psychologically meaningful themes from a large corpus of text data, we identified 5 themes the text portion of online dating profiles from gay, lesbian, and heterosexual adults aged 60 and over. By using this method, we avoided

many subjective biases that could arise in traditional content coding and we extracted themes from the language people used in constructing their online dating profiles.

In answering the first research question, regarding what themes are present in older adults' dating profiles, we observed overlap between each of the themes identified in the current study and key themes reported in prior research of dating preferences and motivations. The most prevalent theme in this sample was "Desire for a relationship." This is not surprising given the task demands of constructing an online dating profile, which by definition is an aid in the search for a relationship. This theme also lends support to prior work suggesting that scripts for online dating profiles are well understood by profile writers (Ellison et al., 2006).

The second most prevalent theme was "Hobbies/Interests" followed by "Shared Experiences," "Romance," and "Humor." Each of these themes identified in the current study are consistent with prior work on dating motivations and self-presentations of older adults. Regarding hobbies and shared experiences, prior studies have emphasized a desire for companionship and romance in older adults' dating relationships, noting that sharing time and interests as well as intimacy are key concerns when seeking a romantic partner for both heterosexuals and older adults seeking same-sex relationships (Suen, 2015; Peplau & Fingerhut, 2007; Calasanti & Kiecolt, 2007). Further, humor is a theme appearing in the dating profiles of older heterosexual, gay and lesbian adults alike (Coupland, 2000; Jönson & Siverskog, 2012). The current study strengthens the existing literature on dating motivations and self-presentations in older adult populations by replicating the presence of these key themes using a novel quantitative methodology to extract themes from the actual text of individuals' online profiles.

Regarding the second research question, we found sexual orientation differences in profile content; older gay and lesbian adults had a greater percentage of words in their

profiles belonging to the fourth theme, the romance theme. Although previous research suggests that gay and lesbian adults may be focused more on sex or sexuality in dating advertisements (Child et al., 1996; Deaux & Hanna, 1984, Gonzales & Meyers, 1993, Groom & Pennebaker, 2005; Hatala & Prehodka, 1996), this greater emphasis on romance compared to heterosexual older adults is a novel contribution of the current study. This finding may imply that older gay and lesbian adults are less overt in their discussion of sexuality than mid-life or younger gay and lesbian adults; a desire for sex may be expressed in terms of romance.

Further, analyses revealed two interactions between sexual orientation and gender on thematic content. For Theme 1, gay men and heterosexual women had higher percentages of words focusing on their desire for a relationship, when compared to lesbian women and heterosexual men. This finding is consistent with a recent study on the dating intentions of gay men and lesbian women, which found that lesbian women had fewer long-term dating intentions compared to gay men (Potârcă et al., 2015). Additionally, this finding may reflect the demographic obstacles that heterosexual women and gay men find when partnering in late life, as the pool of single older men declines in older age groups (Ortman, Velkoff, & Hogan, 2014).

We also found an interaction between sexual orientation and gender on the percentage of words in Theme 2 “Shared Experiences,” such that women had higher percentages of words belonging to this theme compared to men, but this was especially true among heterosexual women. While companionship is often cited as the highest priority of older adult daters (Calasanti & Kiecolt, 2007; Bulcroft & Bulcroft, 1991), we did not find any indication in prior literature that women value sharing time and experiences with their companions more so than men. Perhaps older women’s greater emphasis on shared experiences reflects the broader finding that women report more

loneliness than men in late life (Pinquart & Sorenson, 2001). Future work should seek to disentangle the role of gender and sexual orientation in desires for shared experiences and companionship in late-life romantic partnerships.

We did not find sexual orientation differences in the percentage of profile words belonging to Theme 3 “Hobbies/Interests” and Theme 5 “Humor,” suggesting that older adults in this sample shared some similarities in their approach to constructing their dating profiles. This finding provides support for the assertion that gay and lesbian adults use similar dating scripts to those of heterosexual adults in certain regards (Klinkenberg & Rose, 1994).

Addressing the third research question, we also considered the context of older adults’ dating lives by exploring regional differences in profile content. We found that gay and lesbian adults residing in geographic regions with low structural support for LGBT people had the highest percentage of profile words in Theme 2 “Shared Experiences,” whereas gay and lesbian adults in high support environments had the lowest percentage of words in this theme. Perhaps gay men and lesbian women living in environments with less support for LGBT people feel less connection to their communities or their social networks; their greater desire for shared experiences may be fueled by a lack of connection in their day-to-day lives. This finding demonstrates that environmental supportiveness is related to how gay and lesbian adults approach dating and romantic relationships.

LIMITATIONS AND FUTURE DIRECTIONS

It is important to acknowledge some of the limitations of the current work. First, as previously mentioned, we lacked a self-identified measure of sexual identity. Due to

the structure of the websites and the data, we designated sexual orientation based on adults' stated gender and the gender of the partner they were "seeking."

Further, the MEM procedure focuses on the most common content words across a sample when identifying theme. This means that the five themes extracted in the current study are not comprehensive of all themes present in the profiles; themes that may have been present among a smaller portion of profiles would not have been identified using this technique. Additionally, with regard to theme prevalence throughout the sample, because the first theme included the greatest number of words (just over twice as many words as Theme 2), it was much more likely to be named the most prevalent theme. However, it is worth noting that because the number of words in each theme decreased subsequently from Themes 1 to 5, we might expect that the theme prevalence would decrease in a similar manner, yet Theme 3 did have a higher prevalence across the sample than Theme 2.

An additional limitation of the current work is that we did not collect information about older adults' prior relationship history or other background variables, although this would likely have provided additional context for the interpretation of results. However, due to the public nature of the data, we prioritized the privacy and anonymity of profile writers. Previous work using large internet datasets has shown that it is possible to reconstruct identities with even a limited number of background variables (Parry, 2011; Zimmer, 2010). For this reason, we were constrained in the number of background variables that we could ethically collect.

To our knowledge, the current study is the first to apply the Meaning Extraction Method to the online dating profiles of gay, lesbian, and heterosexual older adults. By utilizing a quantitative method to identify themes based on online daters own words, the MEM provides a nuanced look into the dating motivations and self-presentations of older

gay, lesbian, heterosexual adults. While we discovered common themes in profile content across the sample, results also suggest that sexual orientation and the regional contexts in which these adults live their lives may be related to how they present themselves to potential partners.

GENERAL DISCUSSION

Results from the current studies suggest that the content of individual's dating profiles differs based on their age, gender, and sexual orientation. Utilizing two large datasets of publically available dating profiles and a mixed method approach allowed for a novel examination of the ways in which individual characteristics may be related to motivations towards dating and romantic partnership. Studies 1 and 2 highlighted differences in the extent to which individuals emphasized themselves, their close connections, and their bodies and sexuality in their dating profiles. Study 3 identified common themes in the profile content of adults over the age of 60 and examined differences in these themes across demographic areas with different levels of support for LGBT individuals.

I proposed that individuals would structure their dating profiles in accordance with their evaluations of the desires of potential partners as well as their developmental stage and place in broader social environments. The pattern of findings across the three studies was largely consistent with predictions based on developmental, sociocultural, and social exchange literatures. Due to the complex nature of the results, I will highlight findings and their implications separately by age, as well as gender/sexual orientation. Then I will present limitations of the current work as well as recommendations for future studies.

AGE DIFFERENCES

Across the three studies, we observed numerous differences in profile content as a function of age. Results revealed that older adults are less focused on the self than their younger counterparts, showing lower percentages of profile words in the first-person singular category and a lower likelihood of posting a selfie to their dating profiles. This is

consistent with developmental research suggesting that older adults' are less focused on identity and agency goals than younger adults (Sheldon & Kasser, 2001). Additionally, younger adults show high self-focus across both the written content of their profiles and photographs. Again, this consistent with the developmental goals of young adulthood, which focus on attaining adult statuses and establishing one's identity (Arnett, 2000). It is important to note, though, that the higher likelihood of selfie posting among younger adults could also be attributed to a cohort effect, as younger adults use social media, smartphones, and the post pictures online to a greater degree than older cohorts (Rainie, et al., 2012; Perrin, 2015; Smith, 2015).

In addition to being less self-focused than younger adults in their dating profiles, older adults also were more focused on close connections. Results showed higher percentages of profile words in the first-person plural and friends categories among older adults. These findings highlight the importance of social ties in later life. Research describes that as adults age, they invest more in their close relationships and begin to focus on goals related to generativity (Sheldon & Kasser, 2001). Further, socioemotional selectivity theory suggests that due to a shrinking time horizon that accompanies aging, older adults shift toward prioritizing emotional rewards, including close, rewarding ties with family and friends (Charles & Carstensen, 2010).

It is notable however, that we did not observe age differences in the percentage of words in the family category, suggesting that individuals seeking a new romantic partner are likely to describe family ties no matter their age. This finding is consistent with prior work examining age differences in the content of online dating profiles (Davis & Fingerman, 2016). It may be the case that family relationships are salient to adults of all ages when seeking a new relationship, yet older adults are more focused on bring a potential partner into their broader friend network.

With regard to photo displays with social network members, results suggest that contrary to the findings in the written profile content, adults in late midlife and late life were less likely to post photos with others compared to younger age groups. Again, cohort differences in photo posting behavior may partially explain this finding. Conversely, research shows that the overall number of social network members declines with age as individuals trim their social networks to prioritize only the social partners with whom they receive the greatest emotional rewards (Charles & Carstensen, 2010). This decline in the likelihood of posting a photo with others may also reflect a smaller overall social network.

In Study 2, with a focus on the body and sexuality, results revealed few age differences, which is notable given persistent age stereotypes that paint older adults as uninterested in physical intimacy and sex. Adults of all ages were equally likely to post a body photo to their dating profiles, though the degree of body display did appear to decline in late midlife and late life. This suggests that among profile writers who post photos to their profiles, showing one's body (as opposed to just the face) appears to be an important component of attracting potential partners. However, the degree to which individuals emphasize the body may be related to the concerns or body insecurities that can accompany aging (Martin et al., 2000).

Further, there were no age differences in the percentage of profile words in the sexual category, which is consistent with a prior study of dating profiles (Davis & Fingerman, 2016). Although age differences were not significant, the oldest age group actually had the highest mean percentage of sexual words, suggesting that older adults value sexuality when seeking a new romantic relationship. This finding is consistent with research suggesting that older adults who have romantic partners are sexually active and regard sexuality as an important part of their lives (Waite et al., 2009).

Lastly, Study 3 helped to illuminate the common themes across the dating profiles of older adults. Older adults across the US focused on their desire for a relationship, shared experiences, romance and humor. Further, individuals used their profiles to describe their interests and hobbies. Broadly, these themes align with prior work describing how individuals construct dating profiles (Ellison et al., 2006). Additionally, these themes correspond to key motivations to date among older adults, which include companionship, intimacy, and romance (Calasanti & Kiecolt, 2007; Cooney & Dunne, 2001; Montenegro, 2003).

Overall, this dissertation presents older adults as less focused on the self and more focused on connections to others (especially friends) compared to their younger counterparts. Counter to ageist assumptions, they are equally focused on sexuality compared to younger adults when seeking a romantic partner, though less likely to display their bodies.

GENDER/SEXUAL ORIENTATION DIFFERENCES

In addition to age differences, this dissertation highlights numerous gender and sexual orientation differences, including specific findings regarding gay men, lesbian women, heterosexual men, and heterosexual women. These findings point to distinct motivations among these different groups and different strategies for crafting dating profiles. To summarize these findings, I will start with main effects for sexual orientation and gender separately, then move to interactions/group differences.

When compared to heterosexual adults, gay and lesbian adults displayed more self-focus in the written portion of their profiles. Yet, at younger ages, heterosexual adults displayed more self-focus in their profile photographs compared to gay and lesbian adults. This suggests that adults of different sexual orientations are using different aspects

of their profiles to focus on themselves. Research suggests that gay and lesbian adults are especially likely to use the internet to explore their sexual identity (Lever et al., 2010), which may be related to the higher percentage of self-focused pronouns in the current study. Conversely, selfies are not only a way to focus on the self, but as a cultural phenomenon they may reflect the dominant culture of heteronormativity (Senft & Baym, 2015), and therefore may be less common among younger gay and lesbian adults compared to their heterosexual counterparts.

In addition, sexual orientation differences arose in the extent to which individuals focused on others in their dating profiles. Gay and lesbian adults displayed a higher percentage of other-focused pronouns than heterosexual adults, but heterosexual adults showed a higher likelihood of posting a photo with others. Additionally, gay and lesbian adults mentioned friendships more often in their profiles, whereas heterosexual adults focused more on family relationships. Again, these findings show that adults with different sexual orientations use their profiles differently to display themselves and their relationships with others. Research suggests that friendship networks are especially important in the lives of gay and lesbian adults, as they are more likely to have strained relationships with family members or perceive less social support from family members (Elizur & Mintzer, 2003; Kurdek, 2004, 2006). The fact that heterosexual adults are more likely to post both selfies and photos with others may also reflect norms for the dating websites (which are predominantly made up of heterosexual users).

We also observed gender differences in profile content across the three studies. Women were more likely than men to focus both on themselves and on family relationships than men. Additionally, in the third study older women were more likely than older men to discuss their hobbies and interests as well as emphasize their desire for shared experiences and humor. These findings are consistent with literature stating that

women are more likely to discuss their personal interests and personality in dating profiles (Whitty, 2008). Further, research has demonstrated that women are highly focused on family relationships, as they have been socialized to act in a communal manner and to define themselves in terms of their close relationships (Eagly, 1987; Eagly & Wood, 2012).

Next, I describe findings that highlight specific differences among gay men, lesbian women, heterosexual men and heterosexual women. Of these groups, heterosexual men had the lowest mean percentage of words in the first-person singular category and the highest mean percentage of words in the first person plural category, reflecting a low self-focus and a higher focus on connections. Additionally, heterosexual men had the lowest mean percentage of words in the sexual category. It is likely that these findings reflect how heterosexual men are attempting to appeal to heterosexual women when crafting their profiles. By focusing on more on connections (they also had a high percentage in the family category) and less on themselves, they may be intending to present themselves as invested in relationships, which would appeal to heterosexual women's high focus on relationships and family.

Heterosexual women were also likely to tailor their profiles to appeal to heterosexual men and they seemed to rely more on photographs to communicate about themselves than other groups. Heterosexual women had the highest mean percentage of selfies and group photos. They also had the highest mean percentage of body photos and the highest degree of body display. Further, they had the highest percentage of body words and the second highest percentage of sexual words. This is consistent with prior research suggesting that heterosexual women are likely to focus on their bodies and sexuality in their dating profiles (Russock, 2011; Smith et al., 2011; Davis & Fingerman, 2016). Additionally, older heterosexual women in the third study emphasized their desire

for a relationship. This finding may reflect the fact that heterosexual older women face a narrowing in the dating pool as they age (due to the fact that women outnumber men in late life and older men are more likely to remarry following divorce or the death of a spouse; Carr, 2004).

Like heterosexual women, gay men also appeared to tailor their profiles to appeal to the high focus on sexuality and the body among men. Gay men had the second highest body display (behind heterosexual women) and a high mean percentage of sexual words. Additionally, gay men had the highest percentage of words in the friends category, suggesting that friendships may play an especially important role in the lives of gay men. In the third study, like heterosexual women, older gay men had a high percentage of words in the desire for a relationship category, perhaps also reflecting the narrowing pool of potential partners with age.

Lastly, lesbian women had the second highest percentage of words in the first person-plural and friends category, reflecting a focus on others. Like, heterosexual men, lesbians may emphasize their close connections in order to appeal to the communal nature associated with women. Lesbian women also had the highest mean percentage of sexual words, but the lowest proportion of body photos, with just over half of lesbian women posting a body photo. This is consistent with prior research suggesting that lesbian women are less focused on their bodies (Garnets & Peplau, 2006). There are multiple potential explanations for the higher percentage of sexual words. As previously mentioned, women had a higher overall self-focus, and it may be the case that lesbian women use more sexual words as self-descriptors when compared to heterosexual women. Further, it may be the case that single lesbian women are especially likely to desire sexuality within a partnership. Research has shown that lesbian women report less permissive attitudes regarding sexual activity outside of a committed relationship

compared to gay men (Peplau, 2003), therefore sexual desire may be a strong motivator for lesbian women when seeking a romantic relationship.

LIMITATIONS AND FUTURE DIRECTIONS

This dissertation provides a novel examination of age, gender, and sexual orientation differences in online dating profile content. Yet, there are several limitations of the current work. First, this study examines online dating profiles, therefore we are only able to speak to self-presentations among single adults who are seeking a romantic partner online, not all single individuals. Although research shows that the stigma related to dating online has diminished in recent years (Smith & Anderson, 2016), national statistics show that only 15 percent of all adults in the US have used online dating websites or apps. Nevertheless, the percentage of people using online dating has doubled among adults ages 55 through 64 and nearly tripled among adults ages 18 through 24 in a two year period (2013 to 2015; Smith & Anderson, 2016), suggesting that online dating is an increasingly important context to examine relationship formation among current and future generations.

Further, the findings regarding older, gay, and lesbian adults in the current study may not generalize to all older, gay, and lesbian online daters. The samples in this dissertation were drawn from mainstream websites, whereas there are multiple dating websites that cater specifically toward LGBT and older adults. One study found that gay men may be inclined to use niche websites, as mainstream websites were viewed as more restrictive and less tolerant of taboo language (Gudelunas, 2012). Yet, if norms on mainstream dating websites are more in line with norms among younger and heterosexual daters, then the current studies present a conservative test of age and sexual orientation differences as the older and gay daters in the current studies may have felt it necessary to

abide by the broader norms of the dating websites. Regardless, future studies may find it useful to provide comparisons between gay and lesbian profile writers or older profile writers on niche websites versus mainstream websites to see if differences in profile content emerge.

Another key limitation in this dissertation is the lack of inclusion of a variety of variables that may be relevant to the findings of this study. Many online dating websites provide supplementary information about profile writers that would be of interest to the current studies, including desired relationship type, body type category, height or weight, income or occupation, and prior marital status. However, due to the public nature of the data and the lack of consent procedures, the highest priority was to protect the confidentiality and anonymity of the profile writers. Prior studies have determined that it is possible to identify individuals in online profiles with a restricted number of demographic variables (Parry, 2011; Zimmer, 2010), and this is an even greater risk for the gay and lesbian profile writers, who make up a smaller proportion of each of the websites. Therefore, we felt it necessary to limit the number of demographic variables collected in the current study. Perhaps future researchers could partner with dating websites to conduct studies that would involve participant informed consent and collection of a broader range of relevant variables.

Despite these limitations, the current work has several implications for future research and highlights the need to focus on understudied older adult and sexual minority populations, as dating motivations and profile content are different among these adults. Further, it is important to recognize the implications of romantic relationships for these adults' overall well-being. Gay and lesbian older adults are more likely to be single and report feelings of loneliness than their heterosexual counterparts (Espinoza, 2014) and social isolation is a key problem in older adult populations (Cornwell & Waite, 2009).

Research shows that social support from close relationship partners serves key protective functions for the health of older and LGBT adults (Friedricksen-Goldsen et al., 2013; Lachman & Agrigoroaei, 2010). It is important to better understand relationship formation processes in these populations, as a romantic partner could provide numerous benefits to the lives of these adults. By gaining a better understanding of the strategies that these individuals are using to find romantic partners, we may be better able to tailor interventions towards these populations or craft materials for professionals working with older adults that provide educational information for those interested in pursuing a romantic relationship online.

These studies are a step in the right direction, but more work needs to be done to link online dating profile content with relationship outcomes. Ideally, future work would begin to examine the profile content most associated with positive relationship outcomes. We know from some prior work that individuals are more likely to respond to users who provide fewer self-references (Schöndienst & Dang-Xuan, 2011) and people are generally drawn to positivity in profile content (Rosen, Cheever, Cummings, & Felt, 2008). Future studies should focus on evaluations of online profiles, so as to better understand what characteristics individuals find appealing in the profiles of potential partners. These studies may also find that age, gender, and sexual orientation differences emerge in evaluations of profile content, as differences in dating motivations also may influence how individuals evaluate the characteristics of potential partners.

Lastly, this dissertation highlights the importance of considering context in studies of dating and relationship formation. Recent research suggests that geographic regions, including the social climate and institutional support within these regions, are linked to individuals' romantic partner preferences and relationship beliefs (Lau, 2012; Potârcă et al., 2015). The findings of Study 3 suggest that older gay and lesbian adults

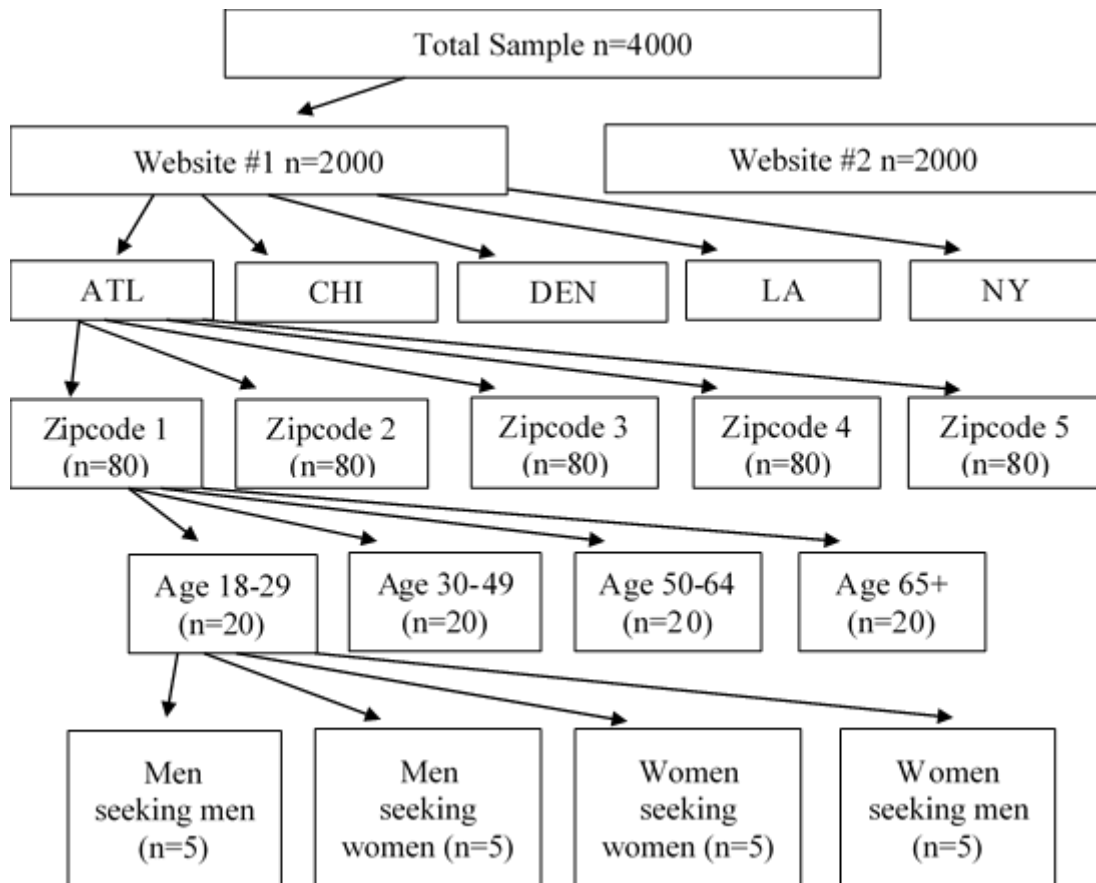
living in less supportive environments sought shared experiences and connectedness to a greater degree than older gay and lesbian adults who lived in more supportive environments. This is only one example of the way in which context may exert influence on the lives of gay and lesbian adults. Future research should help to identify other ways in which LGBT adults living in less supportive environments may approach dating differently from their counterparts in more supportive environments. Perhaps such research could help to address barriers to romantic partnership among LGBT adults in these areas.

Taken together, the findings in this dissertation suggest that age, gender, and sexual orientation differences are present across various dimensions of profile content, including presentations of the self, connections to others, the body, and sexuality. Further, these studies lend support to the idea that regional context may influence how adults approach dating in late life. These studies suggest, despite common motivations for dating, adults present themselves to potential partners in accordance with the motivations tied to their stage in life, their social embeddedness, and their evaluations of what potential partners would find appealing.

APPENDICES

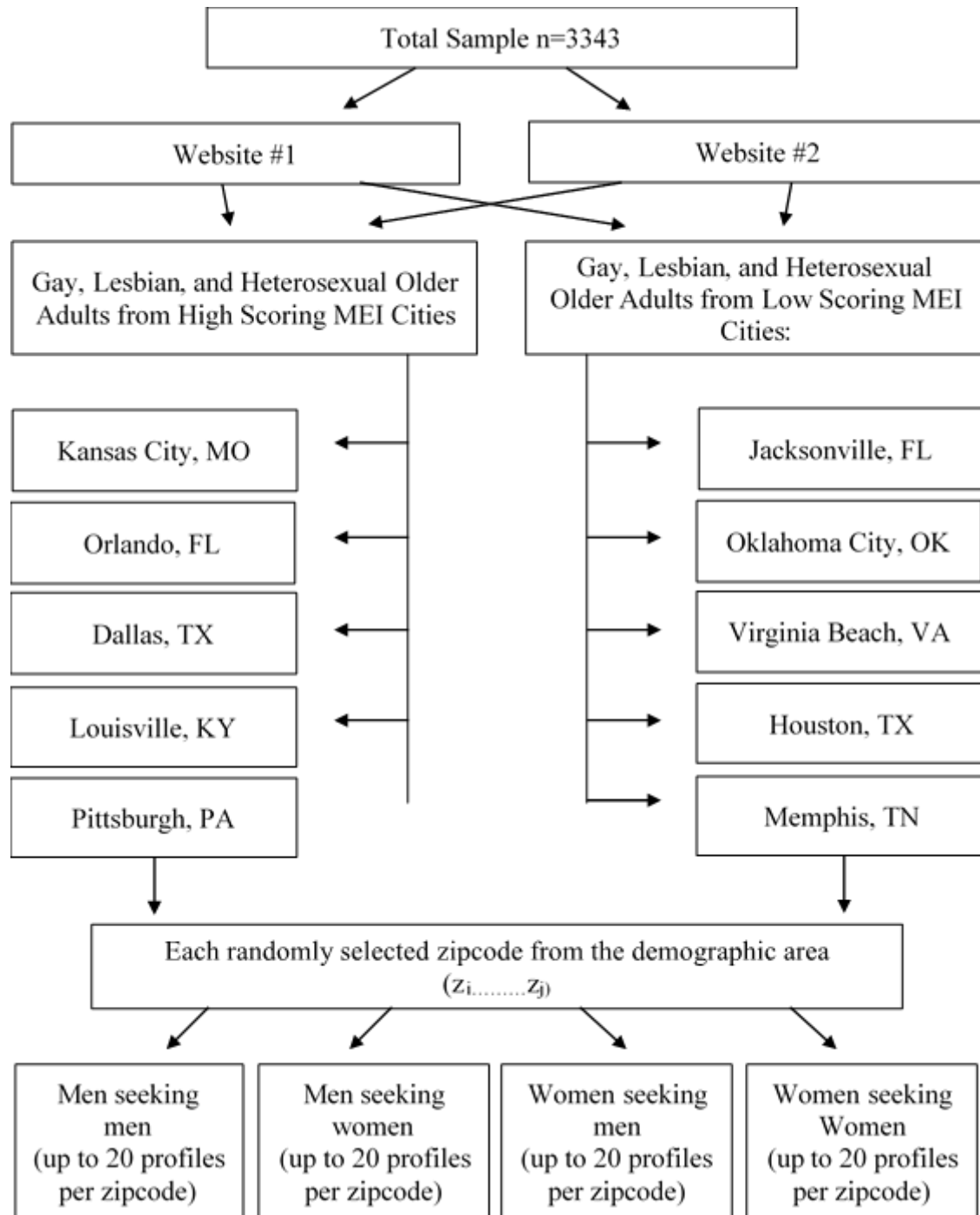
Appendix A

Visual Representation of Sampling Procedure for Study 1 and 2



Appendix B

Visual Representation of Sampling Procedure for Study 3



Appendix C

MEM Procedure

The software used in Study 3, the Meaning Extraction Helper (MEH; Boyd, 2014), was designed specifically to automate topic modeling and lemmatization procedures. Topic modeling refers to statistical modeling used to discover topics that occur in a collection of text samples. Lemmatization refers to the removal of inflectional endings in order to return to the base of a word, or lemma (e.g. “swimming” and “swims” become “swim”). To use the MEH software program, we began with the selection of text files. The software scans each individual text file, as identified by the user. Because the MEM performs optimally when word counts across observations are relatively homogeneous (Boyd et al., 2015), it is common practice when using the software, for larger pieces of text (plays, books, etc.) to be broken down into smaller pieces of text (often in 500-word segments) for ease of scanning. As fewer than 2% of the sample had profile text greater than 500 words, each individual profile (observation) in the current study was scanned as an individual segment, and was not broken down further (the mean profile length of online dating profiles was 117.83 words).

Once data files were located by the software program, the MEH engaged in a rigorous and systematic removal of extraneous characters from the text files prior to scanning and processing. This process included the removal of extra words, referred to as ‘stop words’ that are traditionally of little value to meaning extraction. Stop words usually refer to the most common words in a language (often short function words such as “the, is, at, which, and on”) and the MEH has a default list of stop words in a variety of languages, including English.

Next, we used the software's 'Conversions' function to perform conversions before engaging in the lemmatization process. The default conversions function performed text conversions in order to fix common misspellings (e.g. "wieght" to "weight" or "judgemental" to "judgmental") and convert "textisms" (e.g. "bf" to "boyfriend").

After performing conversions, the software was used to perform lemmatization, which is the process of collapsing together inflected forms of the same word, so as to treat each instance as a single item. For example, the verb 'work' may have appeared in the text as 'work', 'works', 'working', or 'worked'. In this case, the software would recognize and convert each instance into the base form of the word, or lemma, 'work'.

After we completed these steps, MEH processed the text by conducting a frequency and content analysis. The output included a list of all common content words (minus stop words and other words of non-interest) and the frequency of each word across the sample as well as the raw number and percentage of observations the word appeared in. The software also provided a binary output, reflecting whether a given observation contained each word in the common content word list. In the current study, 115 common content words were identified and each of these were treated as binary variable (1 = present, 0 = absent) for each observation or text file. We then submitted this binary output to a principal components analysis (PCA; see Shlens, 2003 for a tutorial) with varimax rotation in order to determine the degree to which groups of words co-occurred across the entire sample.

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